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VOL. XLII,  
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(Nos. I to IV—1873 with ten plates)

EDITED BY  
THE HONORARY SECRETARIES

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"It will flourish, if naturalists, chemists, antiquaries, philologists, and men of science,  
in different parts of *Asia*, will commit their observations to writing and send them to  
the Asiatic Society at Calcutta. It will languish if such communications shall be long  
intermitted, and it will die away, if they shall entirely cease." SIA WM JONLS.

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# CONTENTS

OF THE

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1873.

## PART I.

### No. I.

	<i>Page</i>
Spirituous Drinks in Ancient India.—By BA'BU BA'JENDRALA'LA MITRA, .....	1
The History of Pegu.—By Major-General SIR ARTHUR P. PHAYRE, K. C. S. I., C. B., .....	23
Postscript to BA'BU RA'JENDRALA'LA MITRA'S Paper on Spirituous Drinks in Ancient India, .....	58
Essays in aid of a Comparative Grammar of the Gaurian Languages.—By Rev. A. F. RUDOLF HOERNLE, D. Ph. Tübingen, Professor of Sanskrit, Jay Náráyan's College, Benares, .....	59

### No. II.

Note on two Coins from Kausambhi.—By the Honorable E. C. BAYLEY, C. S. I., C. S., (with a woodcut), .....	109
Rude Stone Monuments in Chutiá Nágpúr and other places.—By COL. E. T. DALTON, C. S. I., Commissioner of Chutiá Nágpúr, (with three plates), .....	112
The History of Pegu (continued).—By Major General SIR ARTHUR P. PHAYRE, K. C. S. I., C. B., .....	120
Notes on the Age of the Ruins chiefly situate at Banáras and Jaunpúr.—By the late MR. CHARLES HORNE, B. C. S., .....	160
Studies in the Grammar of Chand Bardái.—By JOHN BEAMES, B. C. S., &c., .....	165
Further note on Coins from Kausambhi.—By the Honorable E. C. BAYLEY, C. S. I., C. S., .....	191

## No. III.

Authorities for the History of the Portuguese in India.—By T. W. H. TOLBOET, B. C. S., .....	193
Contributions to the Geography and History of Bengal (Muhammadan Period).—Pt. I., <i>Geographical</i> . Pt. II., <i>Historical</i> , based on <i>Inscriptions received from</i> GENERAL A. CUNNINGHAM, C. S. I., DR. J. WISE, E. V. WESTMACOTT, Esq., W. L. HEELY, Esq., WALTER M. BOURKE, Esq., &c., and on <i>unpublished coins, with notes by</i> E. V. WESTMACOTT, Esq., and DR. J. WISE.—By H. BLOCHMANN, M. A., Calcutta Madrasah, (with six plates), .....	209

## No. IV.

Note on two Muhammadan coins.—By THE HON'BLE E. C. BAYLEY, C. S. I. ....	311
Note on two Copper Plate Inscriptions (Kamanj).—By RA'JENDRA-LA'LA MITRA', .....	314
A Metrical Version of the opening Stanzas of Chand's Prithirāj Rasau. By F. S. GOWSE, M. A., B. C. S. ....	329
The Initial Coinage of Bengal. Pt. II.—By E. THOMAS, F. R. S. (with a plate), .....	343

## APPENDIX.

A Rough Comparative Vocabulary of some of the Dialects spoken in the "Nágá Hills" District.—By Capt. J. BUTLER, Political Agent, Nágá Hills District, .....	I
Vocabulary of the Banpará Nágás.—By S. E. PEAL, .....	XXX

# LIST OF PLATES

IN

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1873,

PART I.

---

- Pl. I (p. 115.). The great Mundá Burialground at Chokuhátá, Chutiá Nágpúr.  
Pl. II (p. 115). Monumental Stones in Chutiá Nágpúr.  
Pl. III (p. 115). Regadhi Monumental Stones with Ghost seats.  
(p. 164). Incised writings on Stones at Bakhariyá Khand, Banáras.  
Pl. IV (p. 242). Magni Mogolis Imperium, according to Blaeu's Map (1650).  
Pl. V }  
Pl. VI } Facsimiles of Bengal Muhammadan Inscriptions.  
Pl. VII }  
Pl. VIII }  
Pl. IX } Unpublished coins of the Muhammadan kings of Bengal.  
Pl. X. Initial Muhammadan coinage of Bengal.

## *Woodcuts.*

1. 2. (p. 110), Two ancient coins from Kausambhi.
  3. (p. 269), Coin of Náçiruddín Abul Muzaffar Mahmúd Sháh (I) of Bengal.
  4. (p. 288), Coin of Fírúz Sháh (II) of Bengal.
  5. (p. 312), Coin of Muzaffar Sháh of Bengal.
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# ERRATA

IN

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1873,

PART I.

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- Page 61, line 36, *for मन read मनो.*  
— 64, line 30, *for चंपका read चंपको.*  
— 71, line 17, *for जाया read जायो.*  
— 74, line 33, *for एधनम read एधनम्.*  
— 81, line 6, *for चय read चयु.*  
— 81, line 33, *for ककुचं read कुकुचं.*  
— 81, line 33, *for ककुमम् read कुकुमम्.*  
— 85, line 22, *for Skr. Pr. and गोखामी read Skr. गोखामी and Pr. गोषामी.*  
— 80, line 37, }  
— 86, line 9, } *for मिरिच read मरिच.*  
— 100, line 6, }  
— 103, line 1, }  
— 85, line 16, } *for दधिनः read दधः.*  
— 101, line 7, }  
— 222, line 10, *for river read G'hágrá river.*  
— 235, line 1, *for to read and to.*  
— „ line 25, *for downfall read downfal.*  
— 236, line second note, *for Koch read of Koch.*
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# JOURNAL OF THE ASIATIC SOCIETY.

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Part I.—HISTORY, LITERATURE, &c.

No. II.—1873.

*Note on two Coins from Kausambhi.*—By THE HONORABLE E. C. BAYLEY,  
C. S. I., C. S.

The two coins which I lay before the Society, come from the site of the ancient city of Kausambhi, situate on the river Jamuná, near Alláhábád, a full description of which will be found in Genl. Cunningham's work on the Geography of Ancient India, Vol. I, pp. 391-98, as also in his Archaeological Reports from 1862 to 1865, Vol. I, p. 301.

Bábu Sivaprasád, C. S. I., the Inspector of Schools for the Banáras Division, to whom General Cunningham acknowledges his obligations for information regarding this site, some time ago sent me several coins found upon it. I told him, that though evidently containing types of much interest, they were unfortunately too imperfect for identification, but that I had no doubt, more perfect coins would yield a valuable result.

Bábu Sivaprasád has now sent me the two present coins with a few others of less interest, one of the latter is of the type which Col. Stacy termed the "Cock and Bull" type, and bears the legend 'Deva mita (sa ?)'. This coin, however, is not from Kausambhi, but from Eastern Audh.

The first of the two coins which I am about to describe (Fig. i), is rather thin, weighing 37·035 grains, and is of a white metal which does not appear to be silver, but which I have not ventured to clean. The reverse bears a rude and faint representation of some animal, apparently the Indian bull. The obverse bears, in the field of the coin, the symbols of the sacred tree on the left; in the middle a curious semicircular disk, with a sort of handle and some marks within the semicircle, more like a spade or similar agricultural instrument than anything else to which I can compare it.

The symbol on the right appears to be identical with one often found on the early punched silver coins so common in India, and resembles the rod of Æsculapius, or rather perhaps two serpents entwined across a staff.



The legend, however, is the most remarkable part of the coin. It is quite legible, and I read it as महावरुण्ड, or "Maha Varuṇḍa," the last letter being a compound (as I take it) of the cerebral  $n = ण = n$  and the cerebral  $ḍ = ढ = ḍ$ . The last letter may, however, be possibly वृ, in which case the word would read "varuṇḍā." In either case, the word would be "varuṇḍa," Prakrit for Vāruṇḍa, for which no other meaning is given in the dictionaries, but that of "king of the serpent-," of whom it was either the name or title. I am indebted to Itājā Kāṅkriṣṇa for the etymology of the word, which he derives from the root वृ (वृणाति), "to nourish or support," or as in some lexicons, "to protect, to surround,"—a root from which is said also to be derived the word 'varanda' or 'veranda' in such common use among us.

The conclusions I would draw from the use of this term are as follows,—whether it was used as the name of the striker of the coin, as such names Balarām, Mahārām, Mahādeo, Śukishn, are used in our own day, or as an invocation to the deity worshipped; in any case the use of the acknowledged name or title of the serpent king indicates the prevalence of snake worship at Kausambhi at a period which, from the character of the letters, I should be inclined to place at least one century before the Christian era, possibly much earlier.

The next coin (Fig ii) is even yet more curious. It is of copper and thicker than one above. The weight is 60.444 grs. The reverse also apparently bears the figure of an animal, now undistinguishable; the obverse, however, is unusually clear and distinct, and from the form of the letters, I would give it a more recent date than the previous coin, but still place it not later than the first century of the Christian era.

The symbol to the left Bābu Pratāpachandra Ghosh assures me is the true "svastika," that which is ordinarily so called, and which is identical with the "fylfot" or Odin's seal being properly termed Vajrāṅkus'a.

The centre symbol is the sacred tree, and the third to the right a serpent. The legend runs plainly thus—

ढङ्जतमित  
ṭhaha jata mita

I have consulted Bábus Rájendralála Mitra, Pratápachandra Ghosh, and Sivaprasád as to the reading of this somewhat obscure compound. Admitting that “ṭha” might be taken as the equivalent of “tha,” and that again as the Prakrit representation of “stha,” Bábu Rájendralála nevertheless prefers to read the legend as written, and I am disposed to agree with him so far. He would take the syllable “ṭha” as representing the little used word “ṭha,” ढ, an idol ; “ha,” ह, to break ; and, jata, जत for जित, conquering or conqueror, with of course “mita” मित, for मित्र, and would read the whole as “the friend of the conqueror of the idol breaker, or the “idol breaker conquering friend,” the latter construction being one used not uncommonly at the period which I have above assigned to this coin. Bábu Pratápachandra Ghosh would prefer to read “stha” for “ṭha,” and the second letter as “pa,” thus making the two first syllables “stha pa,” for sthá pa, which, taking “stha” in the secondary of “the world,” would of course enable them to be rendered as “protector of the world ;” but the second letter is, I think, too plainly “ha,” so that the reading of “pa” is not admissible.

Bábu Sivaprasád prefers reading “jata” as “jāta,” born, quoting the parallel name of “Ajātasatru,” a suggestion which may be well worth considering, the entire thus read might be translated as “friend of him who was born an iconoclast.” Without expressing any preference for these readings, which I give only as suggestions, I leave the further discussion of this very interesting coin to Sanskrit scholars.

Accepting, however, as is, I think, almost unavoidable, Rájendralála's version of the two first syllables, the question naturally arises as to who “the iconoclast” is, to whom they point. Genl. Cunningham considers that the earlier Buddhists admitted the use of at most only symbols of the deity, and rejected all representations or worship of Buddha personally. If that be so, the “idol breaker” might well be one of the earlier Buddhist rulers or missionaries : in any case the term is curious as pointing thus early to a struggle against idolatrous worship.

In the next place it seems to me that this curious and somewhat ponderous combination of terms can hardly have been the actual *name* of any individual, but that it was more probably an assumed title, or synonym, perhaps that of some municipal functionary of Kausambhi. Bábu Rájendralála has suggested as accounting for the use of the curious word ढ, that it might have been employed under a custom by which the first letter of a Hindu name is often that of the asterism under which he is born, and as ढ is the letter for Leo, the name might indicate the birth of its bearer under that asterism. If, however, it was an *official* title, this suggestion

would not apply, unless, indeed, it might perhaps similarly indicate the commencement of office under that asterism.

Any way, the coins are both very suggestive contributions to the little-known early history of India, and Bábu Sivaprasád deserves the thanks of the Society for bringing them to light.

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*Rude Stone Monuments in Chutiá Nágpúr and other places.—*

By COL. E. T. DALTON, C. S. I., *Commissioner of Chutiá Nágpúr.*

(With three plates.)

A passage in the address of our President published in the Proceedings for February last, reminds me that I should no longer delay in laying before the Society some extracts from my journal describing rude stone monuments in Chutiá Nágpúr. We have here the advantage of possessing both ancient and modern monuments of this type. We may find them crusted with lichens of time and belonging to a generation of whom no tradition even remains, or we may find them still moist with the tears of the mourner!

In my work on Descriptive Ethnology, I have given all the information which I possessed regarding the ceremonies and solemnities adopted by the Kolarian tribes in the disposal of their dead, but in regard to their monuments, their dolmens and monoliths, there is much more to say, especially since, after reading Fergusson's deeply interesting work on the subject, I find that so little is apparently on record regarding the rude stone monuments of Bengal.

In the cold weather of 1871, my work took me through some of the wildest parts of the Singbhúm District, and I saw many good specimens of the sepulchral and monumental stones of the Larka Kols or Hos. The former are in the village sometimes in one place or burial ground under the finest and oldest of the village trees, but sometimes the principal families have each their own collection near their houses.

The sepulchral stones consist of huge slabs covering the spot or spots where the ashes repose in earthen urns, raised a few inches from the ground by smaller stones used as pillars. In the village of Borkela, eight miles south of Chaibásá, I noticed a burial slab placed over the ashes of the grandfather of Sikur, the present deputy Manki of the Pir. Its dimensions were as follows: length, 16 feet; breadth 7 feet; and 1 foot 3 inches thick. Another over Turam, the grandfather of the Manki, length, 16 feet; breadth 7½ feet; thickness, 1 foot. This stone, an enormous slate, was carried from its site three quarters of a mile from the village, and the people devoted two months to the work, moving it inch by inch on rollers, when men could be collected for the purpose.

It is not surprising that they should take all this trouble for a man in the position of the Borkela Manki who is a chief of considerable influence and old family; but at the next halting place, Sargam Hato ('the village of the Sál Tree'), I saw a huge stone which had been brought to the village in anticipation of the death of an old woman who was in the last stage of decrepitude. This old crone was not a pleasing object to gaze upon, and she had been for many years a burden to her family, but she had been kindly cared for, and had the gratification of knowing that a public funeral had been decreed to her, and the satisfaction of gazing on the monumental stone which had already been prepared to commemorate her virtues.

The Saranda Pir is a mass of hills forming the southern geographical division of the District of Singbhúm, and has a population, chiefly Kols, of about 700 souls. I entered the northern portion of this wild, unfrequented tract on the 1st January, 1872, and passing through it from end to end, emerged in Bonai on the 7th.

The villages of Saranda are few and far between, and the scanty population of the Munda type of Kols are in a very primitive state having no intercourse with the world beyond their own valley. In marching through the Pir to Bonai, the road continued up the valley watered by the Koina, which we traced almost to its source, and the small villages were for the most part on or near its banks. The sites were picturesque enough, and we generally found for our bath, pools shaded and rock-bound, in which Diana and her nymphs might have disported themselves. The people were at first rather shy. Many of them had never before seen a white face, but they gained confidence as we quietly advanced, and no evil fell on them in consequence of our intrusion. On one occasion, the women of a village which we passed were induced to follow us to camp, and there they sang and danced for us. Most of the men were away clearing the road; but those we saw, and the girls, in number twenty-five, who danced for us, were of strikingly fine physique, and there was very little drapery to hide their grand proportions. The predominance of eyes, nose, and mouth of the Mongolian type was very remarkable; some of them were of very light and bright colour, one of the group from her features and complexion might have been taken for a Chinese girl. Such traits stereotyped in Saranda, seem to indicate that these Mundas have been there from a very remote antiquity without opportunities of miscegenation. Some of the young women told me they had never ventured to cross the borders of their Pir.

After the dance we remained on very good terms with the fair sex in Saranda. The young women joined the men in clearing our path through the forest, and the vigour with which they used their felling axes, the hearty, good humour with which they toiled at the work, greatly astonished and edified our comparatively indolent and apathetic camp followers.



There are no ruins in Saranda, no indications of its having ever been even partially inhabited by people of civilization superior to those who are now there. The Saranda Garh (*i. e.* fort) shewn in the map is a mere earthen wall and moat constructed round the site of a house, formerly occupied by a family who are said to have held the position of chiefs of Saranda. Within this enclosure, there is a wonderful iron kettle-drum of gigantic size. It lies bottom upwards half buried in the earth. The people of the place could not be induced to go near it, except as postulants in an attitude of prayer! The tradition is that when the chief wished to summon his people, the drum was conveyed to the summit of the highest hill, and it could thence be heard in every village in the Pir.

I give these extracts from my journal to shew that in the Saranda Kols we find a very primitive type of the race. They are, by their own account, the true autochtones of the country, and till recently, no one has ever attempted to intrude on their exclusive occupation of this mass of hills. They repudiate all traditions of migrations which neighbouring cognates accept. The country they occupy was made for them and they for the country, and how long have they been here?

The oldest looking village that I saw, was called Rongso, where my tents were pitched under some grand old tamarind trees of immense age. Close adjoining, two noble Banyan trees stretch out their long arms and great hands over a vast area of massive slabs, which cover the ashes of past generations of the villagers. The small huts in which the living dwell, are miserable structures, but the dead lie in the most solemn and impressive burial ground that I have ever beheld. I have seen no finer Banyan trees than those which here form not only the canopy of the mausoleum, but grow columns and arches separating the whole into compartments, which fill the mind with a vision or dream of aisles, transepts, and crypts,—an old abbey of the Elves or Dryads. The site, it is said, was originally taken up by one family. There are now fifteen houses and about 75 inhabitants. The deaths are at the rate of about two per cent. per annum. All who die do not attain to the dignity of a slab, and the ashes of several members of a family may be deposited under one stone; for this is the custom of the Mundas, and I found the Saranda people more Munda than Ho, that is, in customs resembling more the Kols of Chutiá Nágpúr proper, than the Singbhúm members of the family. The slabs above ground considerably exceeded 300 in number, but there were more buried or nearly buried. We may assume 400 slabs, and if we give only two to a slab and make allowance for the increase which starting with one family there must have been in numbers, we have proof of great age in what we see.

But this is a pigmy burial-ground in comparison to some which I subsequently visited.

I am indebted to Mr. T. F. Peppé for having directed my attention to the great Munda burial ground of Chokahatu ('the place of mourning'), and for the photograph of this very interesting scene, which I am sending with this paper.

This village is situated between Bundú and Buranda with Tamár to the south. These are all estates in the Lohardagga District, or it would be better to say in Chutiá Nágpúr proper, called now, with two others, Páneh (five) Parganah. The majority of the population and oldest people are Mundas, and the chiefs, who are usually called Rájás, are unquestionably Mundas too, though they are now thoroughly Hinduised, and call themselves Rájapúts and Kshatriyas. There is a burial ground at Bundú, which merits attention, as a section of an understratum of graves, buried by time, is shewn where the soil has been cut away by water, and the cinerary urns are exposed, but the account of one will suffice.

The road from Bundú to Chokahatu goes east through a highly cultivated country. It crosses the Kanchi River, and on the right bank of that stream, I came unexpectedly on some very old looking ruins of stone temples, eight in number, apparently dedicated to Siva, as I noticed several lingas about, the only visible objects of worship.

The temples were mere shrines built of cut stones, squared and put together without any cement or clamps. No one in the neighbourhood has the faintest notion by whom, or at what period, these shrines were constructed. A quarter of a mile east of the ruins, I found a *deserted* Kol burial-ground, close to the village of Dáruháru, but the people of Dáruháru dare not use the old burial-ground; the descendants of those whose ashes lie there are gone out of sight and memory. And the Dáruháru people's remains must be taken to a spot two miles distant from their houses! Now I noticed that in this deserted burial-ground a very free use had been made of the stones cut for the temples, the slabs rested on such cut stones, so the deserted burial-ground was in use when the temple was in ruins, but all around have now passed away from the recollection of man, both those who worshipped the Sivas of the shrines, and those of another dispensation who helped to destroy them.

It was past noon when we came in sight of the great Chokahatu\* burial-ground. It was then between us and the village of the name, the centre of a great plain, an anomalous interruption to a huge expanse of terraced cultivation. There are no great trees here to shade the graves, the field of mourning has no such solace.

The march had been a long one, and there was no time to lose, as I could not afford a halt, so I set all my clerks at once to work to count the slabs, and to measure the area of the space which they covered. The result gave

\* Lat. 23° 10', North; Long. 85° 56', East.

seven thousand three hundred and sixty tombs, mostly of the dolmen or cromlech form, almost covering an area of 22 bighas and 16 kattas, more than seven statute acres, and so close together, that you might traverse the ground in different directions stepping from grave to grave.

Many of the slabs appeared level with, some even below, the surface. Their sunken condition proclaimed their age, as we may presume that originally they were like the others above ground, supported on vertical stones. The horizontal slabs are many of them, huge masses of gneiss of various irregular forms. One, 15 feet 3 inches in length, by 4 feet 6 inches in breadth, was supported on five square pillars, 18 inches above ground; one half-buried slab, nearly elliptical in form, measured 12 feet 9 inches by 9 feet 10 inches; one nearly circular, like a table, 33 feet in circumference; another 18 feet in length had seven legs. A triangular slab properly appeared as a tripod, and one 13 feet 4 inches by 6 feet 8 inches had six legs.

I do not know that I have given the dimensions of the largest; there were many that appeared at least as large as those I measured.

There is no question as to the object of these raised slabs. Chokahatu, the 'place of mourning,' is still used by the Mundas of the village so-called, and nine of the surrounding villages, for the interment of their cinerary urns, and I believe one need not be long there to witness the ceremony. Many of the cromlechs appeared to have been freshly set up, many had about them a look of hoary age.

I obtained a list of villages which have places allotted to them in the burial-ground, and from the census returns, these villages contain nearly two thousand Mundas who by their faith, if they preserve it, *must* there deposit their cinerary urns. The mortuary statistics of the selected areas of the Lohardagga District give an annual average death-rate of under 20 per mille. If the population and the death-rate were always the same, and every cromlech covered the ashes of only one person, the number of slabs (which we may assume to be 8000, including buried and broken up graves not counted) would represent a period of only 200 years; but if, as with the Kasias, each cromlech is a family vault, and we allow for increase of population as years advanced, and make corresponding deduction in the number of deaths annually, as we count back we might give 1000 to 2000 years as the age of the oldest now existing, and probably excavation would disclose an understratum of similar graves.

I was told on the spot that some of the slabs were known to cover the ashes of several members of a family, but the ashes of one or two great men reposed in solitude. In Singbhum, the latter custom is prevalent; but amongst the Mundas of Lohardagga, the family grouping of ashes is practised.

It is, of course, hard to say what changes may have taken place, likely

to affect the numbers of the Munda people in this part of the country, but there is no reason for supposing that there has been any considerable reduction by emigration. All Mundas who make use of the Chokahatu cemetery, must, in accordance with the creed of the race, be the descendants of colonists who established themselves at Chokahatu or somewhere near it. The founders of the other villages must be offshoots from the first settlement; the probability, consequently, is, that the Munda population of this neighbourhood has greatly increased.

The monumental stones in this part of the Munda country are few in comparison with the sepulchral; but many are noticeable, some in the villages, even within the garden enclosures (as they are always placed by people of the Kharriah tribe), some scattered in the fields as if placed there for the benefit of the cattle, like those whose founder Scotchmen are said to bless, and some in groups. The arrangement of the group is in line, perhaps indicating a line of ancestors or a family. They frequently served for a father, mother, and their offspring; but I do not find that more than one monumental pillar is ever set up in honor of one person. The turban seen occasionally on the central and tallest of a line of such monuments in the Kasia Hills, I have never perceived amongst the Kols; but though I have not myself seen carved pillars erected by Mundas to the memory of the dead,\* I have heard of them.

It appears from Yule's account† of the Kasia cenotaphs, that cromlechs are sometimes found in front of them, a flat stone resting on short rough pillars which form the ordinary road side resting place of the weary traveller. These are not cineraries. I have stated in my 'Ethnology' that the Singbhûm Kols, when they first set up a monument, make round it a plinth of earth, on which the ghost of the departed or other person who is bold enough to take the seat may rest, but I have recently seen both in the Lohardagga and Singbhûm districts.

Monumental monoliths with little cromlechs in front, ghost seats, resembling exactly the Kasia seats, depicted and described by Colonel Yule, I first saw in Sonapet, a beautiful valley, the hills forming which give birth to the Sona River, an auriferous stream, hence the name. This valley has been held for ages exclusively by Mundas. Each village is a parish with its separate burial-ground and head man, and at the entrance of one of these, the village of Sûrsi, I saw a fine monument of this description, raised to the memory of a respectable inhabitant recently demised. The Hargari, or cemetery, was at the other side of the village, and his grave was there shewn to me. So there could be no doubt that the seat was not, as I

\* Mr. T. F. Peppé has kindly favoured me with a sketch of such carved pillars which I forward.

† Journal, As. Society, Bengal, No. CLII, 1861.

had at first supposed, the cinerary. The pen and ink sketches herewith sent are of similar monuments in and near the village of Regadih in Kursaon.

As the monolithic monuments throughout the Kol country, nominally, bear no proportion to the cromlechs, we must infer that the erection of the former in the name of the deceased is a much greater and rarer honor than the construction of the latter. In Singbhúm, the Mundas and Mankis are even now ruminating on the expediency of cutting on the pillar at least a name and date to shew to posterity in whose honor it was set up and when; for they admit that the object is not attained under the present system, as the name does not survive to a third or fourth generation.

The same remark applies to many pillars which have been set up to commemorate some solemn compact or action of importance, of which the stone itself now tells nothing. The art of making the stone tell its own story must be taught at the Chaibásá Industrial School.

In some parts of the country, suitable stones are not readily procurable. The first alternative is a cairn, a heap of stones usually constructed round a post, the second the post alone; but the top of the post, if set up in honor of some deceased friend or hero, is credibly carved into the representation of some animal. It looks like a cross between a camel-leopard and a horse. It is, I believe, the Bir Sádóm of the Kols, the jungle horse, the Nílgaí, *Antelope picta*.

It is obvious that a people thus addicted to the use of these milestones of ages, (without figures unfortunately) must have left traces of themselves in all places which they have successively occupied; and from all I have heard and read and also from what I have seen, I am of opinion that such traces of Kolarian occupation may be found wherever the cognates of the Mundas of Chutiá Nágpúr have been located.

There are traditions of the pre-Aryan Kol occupation of the Bihár and Gayá districts, and Mr. T. F. Peppé, Sub-Deputy Agent, who takes great interest in these questions, has seen the monolithic monuments in Japla, and Balaunja, in Siris Kútumba, in the wilder parts of the Gayá district, and about Shergháti. We thus have them up to the Son River and in the Gangetic provinces. Mr. Peppé's note to me on the subject is appended.

From the western parts of the Mánbhúm district, the Kúrmis, it is said, expelled the Kols. We have good proof of this in the fact that the Kúrmis are now there in possession, and within their boundaries we find the sites of the old Munda villages clearly indicated by their old cemeteries and occasional monolithic monuments.

In a southerly direction, I have found these Munda footprints as far as the confines of the Sambhalpúr district, and indeed in that district, and in Bámrá.

In all the places above mentioned, we have either the Mundas *in situ*, or traditions of their occupation and the stone monuments to attest the tradi-



J. Seemann, Lith.

*The Great Munda Burial-ground at Chokichata (p. 116).  
(From a photograph.)*





*Regadhi Monumental Stones with Ghost's seats.  
(From a Sketch by Col. E. T. Dalton, C. S. I.)*



*Monumental Stones, carved and plain, near Bajpur,  
Lohardagga, Chutia Nâgpur.*









tion; where we find the latter without the traditions or the people, we may still safely infer that we have got on Munda tracks.

*Note by Mr. T. F. Peppé.*

'I have observed the monumental stones all along the boundary between Bihár and Chutiá Nágpúr, and have little doubt they would have been found in the more civilized portions of the Bihár and Patna districts, had not the custom been so common of erecting monumental stones in honor of deceased Hindús at the road sides leading into the village; and all sorts of stones are found set up in this way, many of them rude uncut stones, others parts of temples, and I feel sure many of them have been appropriated from their Kolarian predecessors.

'In the wilder parts of Bihár, in parganahs Japla, Balaunja, Sirris Kútumba and also in Shergháti, they are often to be met with, and their being found scattered over the country leaves little doubt of their Kolarian origin, to which local tradition assigns them.

'In several places, I have seen a singular kind of monumental stone in the Lohardagga district, and the accompanying sketch may give you some idea of those I have seen near Bajpúr, some few miles north of Nugri. They were claimed by the Pahan, or priest, of the village, who said that they had been set up in honor of his ancestors. I have seen them at other places also, but cannot remember where.

'With regard to Hargaris, or Harsaris, as they are sometimes called, I think it worth noting that the largest collections are found in the tract of country lying on both sides of the Subanrekha, bounded on the west by the Chutiá Nágpúr Gháts, on the east by the Ajodia hill, on the south by the Singhbhúm hills, and on the north by the hills forming the boundary between Hazáribágh and Lohardagga and Mánbhúm. This tract includes the parganahs of Silli, Barunda, Rahi, Bundú, and Tamár on the west side of the Súbanrekha, and parganahs Julda, Bygonkudar, Bághmúri and Patkom on the other side. Judging by the vast collections of grave stones, this tract must have been occupied by a Munda population for a much longer time than any other portion of Chutiá Nágpúr I have seen. As you approach or recede from this centre, the collections of grave stones increase or diminish in number and importance, and it is curious to observe that, in the upper portion of the Damúdar valley, such indications of a Munda population are wanting, only monumental stones being met with.

'The largest slab I measured at Chokahatu, was 16 feet by 6½, by one foot in thickness, but at Barundah, about two miles to the north-west, there are some much larger.

'On remarking the comparative insignificance of the burial places on the plateau with those in the 'Lutur Desum' or low country, I have frequently been told in reply that it is only the Munda and his Bhúinhárs who have slabs in the former, whereas down below every Muñda family have their slab.'

*The History of Pegu.*—By Major General SIR ARTHUR P. PHAYRE,  
K. C. S. I., C. B.

(Continued from p. 57.)

Rádzadirít was succeeded by his eldest son, Binya Dhaminá Rádzá. His two younger brothers, Binya Ran and Binya Keng, who were governors of Dala and Takun (Rangoon), believing that he bore them illwill, entered into a mutual compact for their own protection. They came then to open war with the king; but Binya Ran made his peace, and was appointed crown prince. Binya Keng then wrote to the king of Ava, asking for assistance, and tendering his allegiance. The king of Ava at this time was Thihathlu. He at once sent a force into Pegu, which occupied Dala, but gave great offence to Binya Keng by plundering the town. Binya Keng, disgusted with his allies, secretly made submission to his brother. Some of the principal Burmese officers were treacherously murdered; and a small remnant of the invading force was allowed to retire to Prome. Binya Keng was now forgiven, and was sent to Dala to put the defences in order. After some time Binya Ran, wishing to have the western provinces under himself, induced Binya Keng to move to Muttama, where he was appointed governor; while Binya Ran had Dala, Bassein, and Tharawati. The king remained at the capital with only nominal authority. The king of Ava at this time was Mengréthilathú, who ascended the throne in 784 (A. D., 1422). He determined again to invade Pegu, and sent down an army under two generals. Binya Ran decided to enter into an alliance with him, and offered his sister Tsáubomé in marriage. This was accepted, and the princess having first been consecrated as a queen, went to Ava. After this, the king of Pegu was poisoned by one of the queens, instigated, it is supposed, by Binya Ran. He reigned only three years.

The crown prince now succeeded, and is known as Binya Rankit. He allowed Binya Keng to be viceroy at Muttama, where he was almost independent. He enjoyed that power for eighteen years, and was then succeeded by his sister, who was married to an officer of high rank. This king, though he had some causes for dissatisfaction with the king of Ava, did not go to war. In the Burmese history it is stated that, about the year 799 (A. D., 1439), he interfered in the succession to the throne of Táungu, and placed thereon Mengtsán-ú, the son of a former king. This event is not mentioned in the history of Pegu. The rulers of Táungu, at this period, were anxious to be independent of Ava, and the fact is, no doubt, correctly stated. About this time the king's sister, who had been married to Mungthi-ha-thá, king of Ava, under the name of Tsáu-bo-mé, being dissatisfied with her position at that court, fled secretly with the assistance of two

Budhist monks, and came to Pegu. She was received by her brother with great distinction, and now becomes known in Peguan history as Thakheng, of Sheng-tsáu-bú.

When Monhyin Meng-ta-rá succeeded to the throne of Ava, the ruler of Táungú, Theng-kha-rá, declared himself independent, and claimed to be the rightful king of Ava. He entered into correspondence with Binya Rankit, proposing that they should march with their joint armies to take Prome, and promising, if he was successful in gaining the throne of Ava, to present annually gold and silver flowers in token of allegiance. This was agreed to, and a force of 35,000 men with five hundred elephants, under the command of Tha-min-pa-rán, and 30,000 men by the river under Binya-in, proceeded to Prome.

The king himself went by water; the king of Táungu marched his men across the mountains, and the allied armies then invested Prome. The king of Ava was too much occupied at home in securing his own position, to be able to send any succour to Prome. The governor of that city was, therefore, obliged to surrender it. But negotiations were opened, and Binya Rankit married a daughter of the king of Ava, and then appears to have deserted his ally. Ava and Pegu were now on good terms, but the historian is silent as to what was done with Prome. Pegu was prosperous in this king's reign, and he was much beloved. He repaired and adorned the two great national pagodas Shwé-máw-dau and Shwé-ta-kun. He died in the year 808, or A. D. 1446, after a reign of twenty years.

This king's successor was his nephew and adopted son, Binya Wa-ru, the son of Sheng-tsáu-bú by her first husband. He reigned only four years. He was careful as to the administration of justice; the country was quiet; and there was unrestricted commerce with the adjoining kingdom.

The next king was Binya Keng, a son of Binya Rankit. The Burmese history says that he was assisted to gain the throne by Narapati, king of Ava. He reigned only three years, and was succeeded by Mháu-dau, his cousin.

This King was a cruel tyrant, and put to death all the male members of the royal family whom he could lay hold of. The whole people, clergy and laity, joined against him, and five noblemen put him to death. He reigned only seven months. All the leading men of the country now implored queen Sheng-tsáu-bú, the daughter of Rádzádirit, to take the sovereign power of the kingdom. She consented and was consecrated. All the people, Mun, Mrámmá and Kulá, rejoiced, and the country had rest. The queen received letters from the kings of surrounding countries, and beyond sea from Ceylon and Bij-ja-ná-ga-ran, with which there was much commerce. The queen was devoted to religion; religious buildings were repaired or erected; and the two great national pagodas were entirely re-gilded. Additional land was assigned to them, and five hundred families were dedi-

cated as slaves to the service of the Shwé Dagun, with a complete establishment of artificers and warders for service, day and night.\* One of the Buddhist monks who had assisted the queen to leave Ava, was chosen by her to become a layman; he was then raised to the rank of crown prince, with the title of Dhammádzedi, and was married to the queen's daughter. Being suspicious that the other monk would, from envy, seek to raise a disturbance in the country, he had him put to death. After four years, the queen retired to Talkun, where she built a new palace, the site of which is still preserved by tradition. The crown prince remained at Hantháwati, where he carried on the duties of government, but once a month he came to pay his respects to the queen. Sheng-Tsáu-bú, after reigning three years at Ta-kun, died at the age of sixty-five years. Her name is held in high honour among the people to this day; and a national festival to her memory is celebrated once a year at Rangoon.

The crown prince Dhammá Dzedi was consecrated king. Some nobles were discontented as he had no hereditary right; but when they saw how well he ruled the country, they were reconciled to him. He is celebrated in the history of Pegu for his great wisdom. Numerous instances are given of the difficult questions which he solved, and the decisions he gave in various legal suits. Embassies came to him from China, Siam, Ava, Hau (?), and Ceylon. He was earnest in religion. He made no wars, but extended the boundary of his kingdom east of the Than-lwin, establishing the district of Mháing-lun-gyi. His subjects believed that he could make gold. He died after a prosperous reign of thirty-one years, in the year 853, or A. D. 1491. He received the funeral honours of a Tsekya-wati (Chakrawartti), or universal monarch, and a pagoda was built over his bones, which was crowned and gilded all over, as if it were an object of worship.

He was succeeded by his son Binya Ran, whose mother was the daughter of Sheng-tsáu-bú. During the long reign of this king, nothing is recorded as to intercourse with foreign countries, which had been so prominent in his father's time. He made a progress up the Kráwati at the head of a large army, which is called a pilgrimage to the Shwé-zí-gun pagoda at Pугán. When passing Prome, he was received with high honour by the ruler of that city, who appears then to have been an independent prince. At this time, the king of Ava had little power beyond his own city. In the Burmese history, it is stated that Binya Ran made an attack on a fort built by the king of Táungu, but this is not mentioned in the Peguan history. Binya Ran died in the year 888 (A. D. 1526), after a reign of thirty-five years.

\* For many centuries the servitors and warders of pagodas in Burma have been slaves, that is, persons condemned to the occupation, or descendants of such persons. They are degraded outcasts among the general population. Joshua condemned the Gibeonites to similar occupation. See Book of Joshua, chapter ix. 27.

052  
JOUA  
VOL. 42  
1873.

This king had appointed one of his younger sons to succeed him. This was done through the influence of the mother, but the child was put to death the day his father died, and another son, named Ta-ká-rwut-bi, who was fifteen years of age, ascended the throne. He paid no attention to the affairs of the kingdom, but passed his time in frivolous amusements with evil companions. He disregarded all warnings, and as many evil portents appeared, and even a flaming comet waved in the sky, the people dreaded some dire disaster. At this time Meng-ta-ra Shwó-hti, called Ta-beng Shwó-hti, was the king of Táungu, having succeeded his father in the year 892, when he was only sixteen years of age. Táungu, from being an insignificant state, had slowly risen to importance, and when Ava fell to a race of Shan kings, the rulers of Táungu gradually came to be considered the representatives of the ancient Burmese monarchy. Binya Kan, no doubt, had made an attack on Táungu which had been repelled. The young king, a warlike and ambitious prince, determined to avenge the insult. His first attack on Pegu was made in the year 896. It was unsuccessful, but for four successive years he led his armies against his enemy. At last in the year 900 (A. D. 1538), he mastered the capital Hanthá-wati.\* Takárwutbi is said in the Burmese history to have retired to Prome, where he was kindly received by the king; and it is added that the king of Ava, Tho-han-bwá brought a Shan army to his assistance. But Tabeng-Shwé-hti appeared with an army near Prome, and a battle was fought, chiefly by the flotillas on the Eráwáti, in which he was victorious. But he does not appear to have been strong enough to take Prome; for he retired down the river, and no action was taken to follow him. The unfortunate king of Pegu, unable to induce his allies to support him further, marched down with a small force, and lost his life in the jungle of his native country. In the Taláing history is stated that the king of Ava, who is referred to merely as a Shan Tsáú-bwá, came down to Pegu with an army to assist Takárwutbi, but as they could not agree to the term of an alliance, the former retreated without doing anything. The king of Pegu then died of sickness in the jungle of the district of Engabu. This was in the year 902 (A. D. 1540), and the Shan royal line of Pegu, which had been established by Wa-re-ru in A. D. 1287, became extinct. The new dynasty pursuing a reckless career of conquest, raised the kingdom to a height of dazzling, but false, prosperity, which excited the astonishment of European travellers. But in less than half a century, the country was utterly exhausted, and the population so reduced by war, pestilence, and famine, that to this day it has not recovered.

The narrative having reached thus far into the sixteenth century, when

\* These destructive wars which ended in the conquest of Pegu by the king of Táungu, are described in the Burmese history. See Journal, As. Soc. Bengal, Vol. XXXVIII, for 1869.

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European voyagers, appeared in Burma and Pegu, it is desirable to relate what can be gathered regarding those countries from the narratives of travellers which have come down to us. They give, as might be expected, an insight into the condition of the people, which is not to be obtained from the native chronicles. Up to the beginning of the sixteenth century, European travellers had arrived in Indo-China, either by land, by sea from India, or after the Cape of Good Hope route was discovered, from Malacca. At that time there appears to have been no jealousy felt at their presence. That feeling was developed throughout Southern Asia by the conquests of the Portuguese, the Dutch, and the British, by which European dominion seemed, to the minds of the people, to loom like a dark cloud over their destiny.

After Marco Polo, who came into Burma from Yunan towards the close of the thirteenth century, the earliest traveller's narrative which has come down to us, is that of Nicolo Conti, a Venetian, whose travels have been edited by Mr. R. St. Major, for the Hakluyt Society. This traveller, leaving Europe on a trading expedition, arrived by land at Bussora, and sailing from the Persian Gulf reached Cambay. From thence he went to Ceylon and Sumatra, and sailed up the Malay coast to Ternasserri, now Tenasserim. Passing then by Pegu, he went to Bengal entering the mouth of the river Ganges. Remaining some months in India, he returned southward, and sailing apparently from Chittagong, came to the city of Rachan (Rakháing, or in the modern Europeanized form, Arakan), and river of the same name.

From this city he travelled through "mountains void of all habitations, for the space of seventeen days, and then through open plains for fifteen days more, at the end of which time he arrived at a river larger than the Ganges, which is called by the inhabitants 'Dava.' Having sailed up this river for the space of a month, he arrived at a city more noble than all the others, called Ava, and the circumference of which is fifteen miles."

It appears most probable from the narrative that Conti was at Ava about the year 1430, which would be in the reign of Monhyin Meng-ta-rá, the eighth in the list of kings who reigned in Ava. The river Dava, it has been suggested by Colonel Yule, was originally written "Fiume d' Ava," the name told to Conti for the Eráwati on first reaching that river, after having crossed the Yoma Mountains. The country of Upper Burma he calls 'Macinus,' derived from Maháchín, or Máchín, a name which Colonel Yule has shown to have been applied by Muhammadan voyagers both to China and Indo-China. Conti, no doubt, was in company with Indian traders from Bengal, from whom he would learn this name. In the *Áin Akbarí*, it is stated that former writers called Pegu 'Chín.' Conti describes very correctly two methods employed in Burma for catching wild elephants.

He mentions the habit of tattooing the body, and says that the women practise it as well as the men, which is not now the case. The king, he says, has ten thousand elephants, which he uses in his wars. "They fix castles on their backs, from which eight or ten men fight with javelins, bows, and those weapons which we call crossbows." The number ten thousand is, no doubt, an exaggeration, probably double the actual number. From Ava, Conti proceeded towards the sea, "and at the expiration of seventeen days he "arrived at the mouth of a moderately sized river, where there is a port, "called Xeythona, and having entered the river, at the end of ten days, he "arrived at a very populous city, called Panconia, the circumference of "which is twelve miles."

It is not said by what route Conti went from Ava, but apparently it was by land to Raméthen and Táungu. The port Xeythona may possibly be the town of Sittang, but that town being situated on the river of the same name some seventy or eighty miles from its mouth, and the river not being navigable from the sea, it can scarcely be called "a port." The name, therefore, is more probably meant for Tha-htun, which was an ancient and celebrated port, and was still to some extent frequented. It is now mentioned for the last time in the history of Pegu. The populous city of Panconia, a misprint probably for Pauconia, is no doubt Pegu, or, as Conti would have heard it called, Pa-go or Ba-go. The traveller makes no mention of any war between the kings of Ava and Pegu, and from A. D. 1426 for many years no such war is recorded in the native histories. Conti's narrative agrees well with the local histories, and from his notices of the people, the truth of his statements is evident, even when he mistakes some of the native customs. Thus he observes of the Burmese: "All worship idols; nevertheless, when they rise in the morning from their beds, they turn towards the east, and with their hands joined together say, 'God in Trinity and his law defend us.'" All pious Buddhists in Burma, on first awaking in the morning, invoke or bless the three precious objects "Budha, his law, and his disciples;" but, of course, there is here no reference to God in Trinity.

The next traveller who claims our notice, is Athanasius Nitikin, a Russian, who came to India between 1428 and 1474. He mentions having gone from Ceylon to Shibait and Pegu. He merely observes of the latter—"It is no inconsiderable port, principally inhabited by Indian dervishes." He perhaps means that the principal merchants were Indians, as he says the products of the country were sold by the dervishes. Why he should style them *dervish* is not apparent, but probably most of the Muhammadan merchants assumed the title of Háji.

Hieronimo de Santa Stefano, a Genoese, came by the Red Sea to India, to the port of Calicut; thence to Ceylon and Coromandel, which latter

probably means a port on the Krishna or Godávarí. From Coromandel, the traveller came to Pegu, and records that he was detained there for a year and a half, and that his companion Hieronimo Adorno died on St. John's day, 1496. He was buried "in a certain ruined church, frequented by none," which refers no doubt to a deserted Buddhist kyaung, or monastery. Pegu he calls Lower India, and says of the capital:—"Here is a great lord who "possesses more than ten thousand elephants, and every year he breeds five "hundred of them. This country is fifteen days journey by land from another, "called Ava, in which grow rubies, and many other precious stones. Our "wish was to go to this place, but at that time, the two princes were at "war, so that no one was allowed to go from the one place to the other. "Thus we were compelled to sell the merchandize which we had in the city "of Pegu, which were of such a sort that only the lord of the city could "purchase them. \* \* \* \* The price amounted to two thousand "ducats, and as we wished to be paid, we were compelled, by reason of the "troubles and intrigues occasioned by the aforesaid war, to remain there a "year and a half, all which time we had daily to solicit at the house of the "said lord." At this time, 1496, Binya Ran was king of Pegu. It does not appear from the native histories that he had any direct war with the king of Ava, but he did attack Dwárawati, a fort belonging to Táungu about this very year 1496; and as the king of Ava affected to consider himself the superior of the king of Táungu, some expectation of hostilities may have existed. An expedition was made up the Eráwati a few years later, as we shall see presently. Though the traveller complains of the delay in payment being made for his merchandize, yet he appears to have been treated justly. The property of his deceased companion was seized as a forfeit to the king, such being the ancient law of Burma in the case of foreigners dying in the country. He says, "I was so grieved and afflicted by his death, that it was "a great chance I had not followed him, but \* \* \* \* being consoled "by some men of worth, I exerted myself to recover our property. In this "I succeeded, but with great trouble and expense."

The same king Binya Ran, who reigned from A. D. 1493 to 1526, appears from the account of another traveller, Lewes Vertomannus of Rome, to have been, as he expresses it, "of great magnificence and generosity." This traveller came to Pegu about the year 1503. In his narrative, as translated in Hakluyt, he states that he "came to Pego from Bengalla with "a Persian. The city is walled and the houses buylded and very fayre of "stone and lime. Here are but few elephants. There are exceeding great "reeds, as big as the body of a gross man, or a tub. The king useth not "such pomps and magnificence as doth the king of Calicut, but is of such "humanity and affability, that a child may come to his presence and speak "with him. It is in a manner incredible to speak of the rich jewels, pre-

"cious stones, pearls, and especially rubies which he weareth, surmounting in value any great city. Not long after, news were brought that the king of Ava was coming with a mighty force, whom the king with an innumerable army went to resist." This army probably was the force which Binyá Ran led up the *Eráwati* to Prome, and then on to Pugán. This expedition may have been made to resist an anticipated attack, but in the *Taláing* history, it is represented, with some dubiousness, as a pilgrimage to the pagodas at those cities. When Vertomannus says, "here are not many elephants," he must mean in the city, for the great strength of Pegu consisted in elephants; or they may all have been gathered at a distance to accompany the army.

Early in the sixteenth century, we have notices of Pegu by Portuguese voyagers, who under Vasco de Gama had doubled the Cape of Good Hope. Their actions in Pegu are recorded in the history of "The Portuguese in India, by Manuel de Faria y Sousa, translated by Stevens into English, and printed at London in 1695." The Portuguese were established at Malacca under Albuquerque in 1510. In 1517, John de Sylvera went to Bengal with four sail. He was invited by the king of Arakan to his country, and he appears to have gone to Chatigam, then a port of that king's dominions. In 1519, it is recorded that Antony Correa, "concluded a treaty with the king of Pegu at Martavan, when peace was sworn to by both parties with solemn ceremonies. The metropolis of the kingdom is Bagao, corruptly called Pegu."

We have seen in the *Taláing* history that the last king of Pegu was Ta-ka-rwut-bi, who succeeded to the throne in 1526, and was conquered by the king of Táungu, styled Ta-beng Shwé-htí, the capital having surrendered in 1538. How a Portuguese force happened to be present on this occasion, but which is not noticed in the native histories, is thus stated by Sousa, "Ferdinand de Morales was sent by the Viceroy with a great galcon to trade at Pegu. Pegu was then invaded by the king of Brama. Brama had been tributary to Pegu, but had revolted. The cause of this was that 30,000 Bramas laboured in the king of Pegu's works. The king used to visit them, attended only by his women. They suddenly rose and murdered the king, and fled to their own country. Then Para Mandara, king of the Bramas, rose, recovered his own kingdom of Ava, and overrun the Laos and other countries tributary to Pegu. The king of Brama now invaded Pegu with such a power, that the two armies consisted of two millions of men with 10,000 elephants. Morales went into a galliot, and commanding the fleet of Pegu, made a great havock among the enemy's ships. Brama came on by land like a torrent, carrying all before him, and his fleet covering the river, though as great as the Ganges. With this power he easily gained the city, and the kingdom of Pegu. At the point Ginamarre-

"ca was a furious, bloody, and desperate fight. But the Pegus overpowered "by the Bramas deserted Morales, who alone in his galliot maintained "himself against the enemies, performing wonders with vast slaughter of "them; but oppressed by the multitude, he was killed." Of the Peguans generally it is remarked that "their bodies are all wrought blue with hot "iron down to their knees. In general, they are not only not civilized, but "very brutal."

In this account it should be observed that the Portuguese historian, writing more than a century after the events described, and probably from imperfect documents, in addition to evident exaggerations on points where the European actors in this tragedy might have furnished more accurate information, has been led to narrate supposed events, which caused or preceded the invasion of Pegu by "the king of Brama." These are in themselves highly improbable, and not to be found in the native histories. The king of Brama is, in fact, Meng-ta-rá, or Tabeng Shwé hti, king of Táungu, who, as has already been stated, had by a remarkable train of events come to represent the national party of Burma, against the Shan dynasties of Ava and Pegu. The term Pará Mandara (Phrá Mengta-rá) is a title equivalent to the king's Majesty. In the native histories no distinct cause is alleged for the invasion of Pegu by the king of Táungu; but the relations between the two monarchies, for about a century before, sufficiently account for the event. If "Brama" of Táungu had not been exactly tributary to Pegu, he had for several generations, when it was convenient, depended on the latter to support him in resisting Ava. By the Burmese history, the chief of Táungu, so early as the year 788 (A. D., 1426), had offered to become tributary to Binya Rankit, if he helped him to the throne of Ava, which the chief of Táungu claimed as his right. The two kings had entered into an alliance, and in 1481, the then king of Táungu, fearful of an attack from Ava, sent his wife and children for safety to Pegu. Afterwards, the two kings quarrelled in A. D. 1496, or thereabouts; the king of Pegu attacked Dwárawati, a fort and city belonging to Táungu, but the expedition was unsuccessful. Such an incident as Burmese prisoners or labourers when at work, being visited by a king of Pegu unaccompanied by male attendants, may be regarded as in the highest degree improbable. There is no trace of such an event or of the king's death under such circumstances in the Táking or Burmese history. The last king of Pegu, of the Shan dynasty, who was dethroned by Tabeng Shwé hti, died, as we have seen, in the jungle, having no army, and the king of Ava having failed to give him further support. Some rumours of his having been assassinated in the jungle may have reached the Portuguese, and have given rise to the tale recorded. "Para Mandara, king of the Bramas" who conquered Pegu, was not the king who recovered his own "kingdom of Ava, and overran the Laos and other countries tribu-

tary to Pegu." Those conquests were accomplished many years after the conquest of Pegu, by the successor of Tabeng Shwé hti, who is generally styled Bureng Náung, and by the Portuguese historian 'Branginoco' and 'Chaumigrem.' Both of these kings are mentioned in the Taláing history with the title Meng-ta-rá (to which Phrá would be added in speaking of them); both invaded Siam, and both besieged Prome, so that the error which confused one with the other, is not to be wondered at.

It is doubtful whether Bureng Náung had any hereditary right to succeed Tabeng Shwé hti. His claim seems to have been his great military talent, and his marriage with the king's sister.

The following statement is taken from the Universal History, Vol. VI., published in London in 1781. It professes to derive its information regarding Pegu and the adjoining countries from Portuguese, Dutch, and English authorities. "In 1519, Antony Correa was sent to Bressagukan (Binya "Ran), king of Pegu, to conclude a treaty. That king was slain, in 1539, "by some Barma labourers who were furnished by Para Mandara, king of "the Barmas. The cause of the rising is not stated. The king of Barma "now invaded the country, and Dacha Rupi, the heir to the deceased, was "unable to oppose him. At this time, Ferdinand de Morales arrived with "a great galleon, sent by the Viceroy of Goa to trade. He took the side "of Dacha Rupi, but they could not resist the overwhelming numbers of "the Barmas, and De Morales was slain. This occurred in 1539."

Here we have the names of the two last kings of Pegu, one considerably distorted, and it is Binya Ran who is here said to have been killed by the Burmese labourers in 1539. But that king as we have seen, died peaceably before the great troubles came in 1526. His son and successor Takárwutbi, whom we recognise in Dacha Rupi, died (or was killed) in the jungle in 1539 (or 1540, by the Taláing history), and this date with his flight and death in the jungle seems to give the clue to the origin of the story of the king killed by Burmese labourers.

Tabeng Shwé hti, having taken the city of Hantháwati, proceeded to lay siege to Muttama. This city, which lies to the south-west of the ancient capital, and at a travelling distance of nearly one hundred miles, was then governed by Tsau-bi-nya, brother-in-law of the conquered king, who had the rank of a Viceroy. The siege operations against Muttama, or Martaban, are related in detail in the Burmese Mahá Rádzáweng,\* but the Taláing narrative is brief, and draws a veil over the final defeat of the Mun race. The besieging army numbered 130,000 men, with numerous vessels of every description. The whole was under the command of Bureng Náung, the king's brother-in-law, who is called by the Portuguese historian 'Branginoco.' Not a word is said in either of the native histories of Europeans being in the service of the

\* See History of Burma race, Journal, As. Society of Bengal, Vol. XXXVIII, for 1869.

king of Pegu on this occasion, but it is mentioned that several ships were moored in the river opposite to Muttama, for the defence of the city, which were manned by Muhammadans, called on this occasion in the Burmese history 'Kulá-Pánthé.'\* The native histories make the siege occur in the year 1540, while the Portuguese account places it in 1544. The first is probably correct; the dates in the Portuguese history are not to be depended on. But the story of the siege is told in simple language, and reveals the dreadful doom of the Viceroy and his family, inflicted by the pitiless conqueror, which is passed over in silence by the native historians.† The account is as follows: "In the year 1544, the king of the Bramas, by sea and land, besieged the city of Martavam, metropolis of the great and flourishing kingdom of that name, whose yearly revenue was three millions of gold. Chaubainaa was then king, and Nhay Canotoo Queen thereof, who from the height of fortune fell to the depth of misery. The Brana fleet consisted of 700 sail, 100 of them great galleys. In them were 700 Portuguese, commanded by one John Cayero, reputed a man of valour and conduct. After a siege of seven months and five assaults, wherein the Bramas lost 12000 men, Chaubainaa found it was impossible to withstand that power; provision being already so scarce, that they had eaten 3000 elephants. He offered to capitulate, but no conditions were allowed by the besieger. He, therefore, resolved to make use of the Portuguese, to whom he had always been very just and serviceable. But man never remembers favours received in prosperity of those he sees in adversity."

The history then narrates how the unfortunate Viceroy entered into communication with Cayero, through Seixas, a Portuguese in his service, and offered, if supported by all of them, to become the vassal of the king of Portugal. But this was rejected, and a large body of men from the city having deserted, discovered the design to the besieger. The narrative proceeds: "The king thus betrayed, capitulated with the enemy for his own and the lives of his wife and children, and leave to end his days in retire-

\* The Burmese historian has somewhat carelessly applied the word Pán-thé to Muhammadans from India and Persia. In the present day, it is used to designate the Muhammadans of Yunan only. All Muhammadans from countries west of Burma are called 'Pa-thí,' which is believed to be a corruption of 'Fársí.' The word Pánthé has probably a different origin. The Burmese became acquainted with the Muhammadans of Yunan several centuries ago, from the caravans of those people trading to Ava. As their religion, and some of their customs, differed from those of the Chinese, they, to avoid the hateful name of foreigner, spoke of themselves as being Pan-ti or Pun-ti = indigenous, and thus, it is believed, the name originated in Burma.

† In the paper on the History of the Burma race, J. A. S. Bengal, Vol. XXXVIII, of 1869, it was stated that the governor of Martaban was pardoned by the conqueror. I am now satisfied that this was not the meaning of a somewhat obscure sentence in the Burmese history.

"ment. This and more was granted easily, because the conqueror designed "to perform no part of the promise. From the city gate to the king of "Brama's tent was a league distance, all which way was a lane of many "thousand musketiers of sundry nations, and next the gate were posted the "Portugueses. The first came out was the Queen in a chair with her two "daughters, and two sons in two others. About them forty beautiful ladies "led by as many ancient ones, encompassed by Talegrepos (a sort of religious men among them, habited like our Capuchins), who prayed and comforted them. Then came the king guarded by his enemies, seated on a "small she-elephant, cloathed in black velvet; his head, beard, and eyebrows "shaved, and a rope about his neck, which moved even the enemy to compassion. The unfortunate king seeing the Portugueses, would not stir "one foot till they were removed from that post, and that done went on. "Being come before the king of Brama, he cast himself at his feet, but not "being able to speak for grief, the Raolim of Mounay Talaypor, Chief Priest "of those Gentiles, and esteemed a saint, made an harangue in his behalf, "of force to have moved to compassion any other but that obdurate king. "The miserable king, his queen, children, and ladies were secured. The two "following days were spent in removing the treasure, at which a thousand "men laboured, and it amounted to 100 millions of gold. The third day, the "army had liberty to plunder, which lasted four days, and was valued 12 "millions. Next, the city was burnt, wherein perished by fire and sword "above 60,000 souls, besides as many made slaves; 2000 temples, and "40,000 houses were laid even with the ground. There were in the town "6000 pieces of cannon, 100,000 quintals of pepper, and as much of other "spices. The morning that followed this destruction, there appeared on a "hill, called Beydoo, 21 gibbets, with a strong guard of horse. Thither was "led the queen with her children and ladies, in all making 140, and were all "hanged up by the feet. The king and fifty men of great quality were "cast into the sea with stones about their necks. The army seeing this "barbarity mutinied, and the king was in great danger. He leaving people to rebuild the ruined city, returned to Pegu with the rest of his army, "and among them John Cayero and his 700 Portugueses. Of these four "stayed at Martavam."

King Tabeng Shwé hti, before his departure for Pegu city, received the submission of the governor of Maulamyáing, and took the precaution to guard the frontier towards Zimmé. At the ancient capital he was consecrated king. He put the fortifications in repair, and with great solemnity placed a new hti on the summit of the Shwé mau dau pagoda, and afterwards one on that of the Shwé Dagun. He thus proclaimed his sovereignty of the ancient Taláing kingdom. But he determined to push his conquests without delay. As a first step towards asserting his right to the throne of Ava,



he collected an army to advance against Prome, where Meng Kháung was tributary king under the Shan king of Ava, Thohánbwá, whose daughter he had married. Tabeng Shwé htí proceeded with his army up the Eráwati, Bureng Náung being the general in command. He invested Prome by land and water, but did not make any assault, as the place was strong and well defended with guns. While thus engaged, news arrived that the Shan king of Ava was marching down with a large army to the relief of Prome. Half of the army was sent to meet this force. It was under Bureng Náung, who attacked the Ava force with his accustomed vigour and utterly defeated it.\* A force from Arakan also, brought to assist the besieged, was compelled to fly. The besieging force having sustained heavy loss, was compelled to trust to famine for the surrender of the city. The unfortunate king of Prome was at length forced to surrender, and proceeding to his conqueror's camp, attended by the superior of the Buddhist monks, implored mercy for himself and family. The native histories place this event in the year 901, or June 1542, the siege having lasted for seven months. The king and queen, it is stated in the Burmese history, were sent as prisoners to Táungu, and no more mention is made of them. The Portuguese history states that the siege occurred in 1546. This is incorrect, but the events recorded may, no doubt, be relied on. The queen of Prome, who was older than her husband, appears to have had the direction of affairs in the city. She offered to pay tribute, and hold the crown from Tabeng Shwé htí. But "the king insisted that the queen "should put herself into his hands with all her treasure; but she knowing "how perfidious he was, resolved to defend herself. He gave several assaults, "and by the sword and a plague that raged in the army, lost 80,000 "men, among which were 500 Portugueses." It is also stated that a mount was raised overlooking the town, and being well armed with cannon left no place of safety to the besieged. But in a sally, the besieged destroyed the mount, and carried off 80 cannons. Tabeng Shwé htí on this occasion was wounded, and "in a rage slew 2000 Portugueses that were upon the guard as negligent of their duty." Probably there is an error here in the number; 200 artillery men being more likely intended. The savage treatment of the king and queen is very different to what is narrated by the Burmese historian. "The queen was publicly whipped and delivered up to the lust of

\* The Portuguese history has caused some confusion regarding the events which led to this siege by stating—"The king of Brama was alarmed by him of Siam, who attempted to recover the kingdom of Tangu, which had been wrested from him." For Siam here must be understood the northern Shan or Shian confederation, now led by the king of Ava. This king did claim the allegiance of Táungu, which state had formerly been subject to his predecessors. It was never claimed by Siam. The Siamese and Shians both belong to the Tháí race, and the early European writers may thus occasionally have confused the two. In Father Sangermano's work on Burma, the Shan people are always called 'Sciam'

"the soldiers until she died. The young king was tied to her dead body and cast into the river. The same was done with 300 gentlemen, after "stakes were drove through their bodies."

Tabeng Shwé hti appointed one of the brothers of Bureng Náung tributary king of Prome, with the title of Tha-dodhammá Rádzá. He then returned to Hantháwati, where he endeavoured by works of religious merit to atone for the guilt of bloodshed. He cast a pure gold image of Budha, and next built a new palace. But he was not left long in repose. In Ava on the death of Tho-hanbwá, the chief of Unbáung named Khun-mháing-nge had been elected to the throne. He determined to retake Prome. He marched down at the head of an army formed of the troops of seven Shan chiefs. Tabeng Shwé hti quickly came to the rescue of his tributary king. The Shans once more were defeated near Prome, and Bureng Náung followed them up the Eráwati, capturing all the cities as far as Pugán. He also appeared before Ava, but apparently thinking it too strong to be safely attacked, the army returned to Pugán, and there he established his frontier post.\* The king having taken measures for the safety of his army, returned to Pegu, where he arrived in the year 906, or August, 1544. In the following year, he was again solemnly consecrated, assuming the title of King of Kings, which may be translated 'Emperor.' The tributary kings of Prome, Táungu, and Martaban were present to do homage; and Bureng Náung was formally declared Ein-Shé-meng, or crown prince.

About this time, the king of Arakan died, and Tabeng Shwé hti made an expedition to that country, to place his brother on the throne. The emperor appears to have failed to take the capital, but eventually the son of the late king, styled Mahá Dhammarit, on agreeing to present gold and silver flowers, was confirmed on the throne, and the emperor then returned to Pegu. This expedition occurred in the year 908, or A. D., 1546-47. The return of the emperor seems to have been hastened by news of a movement, which this time was really made by the king of Siam. That monarch had lately taken possession of Tavoy, a town which for many years had been a disputed possession between the two countries. The emperor determined to punish this aggression, not by seizing the town in question, but by marching on the capital of his enemy. All the arrangements were as usual entrusted to Bureng Náung. The emperor left his capital in the year 910 (November, 1548), and proceeded to Muttama (Martaban), where the army had already

\* This expedition up the Eráwati, called the 'Quoytor' by the Portuguese historian, has by him been mixed up with the siege of Prome two years earlier. It is said that the invader returned from Ava, because he heard the king of Siam was coming to its relief. This can only refer to the northern Shans. In the native histories, no reason is given for the retreat from Ava on this occasion. The Portuguese historian then refers to the Empire of Calaminam, and to affairs which occurred many years later, but of which the writer evidently had a very confused notion.

assembled. The plan was to march eastward from that city to Myawati on the Tháung-yin River, and from thence to the upper course of the Mo-nam, the 'mother of waters', on which river Yodaya, the then capital of Siam, was situated. The army occupied in succession the fortified cities of Kamánbaik, Tháuk-katé, and Pi-tha-lauk, and then moved down by land and water to the capital. But from the strength of the wall, the deep and broad moat, the numerous water courses, and the ships moored and armed with guns manned by foreigners, the city was deemed to be too strong for an assault, and the emperor, with the advice of Bureng Náung, determined to retire. In retreating towards Kamánbaik ('Camambee' of the Portuguese) and the other places they had captured, they were attacked by the Siamese, but entirely defeated them, and even took prisoner a son-in-law of the king's. According to the Burmese history, the king of Siam then entered into negotiations and promised, if his son-in-law were released, to pay tribute. This was agreed to by Tabeng Shwé hti, and the invading army then retired. The king returned to his capital in April, 1549.

The Portuguese history gives two accounts of this expedition; one in the first volume, in which it is (wrongly) represented as the second invasion of Siam by Tabeng Shwé hti, and states that the Portuguese who accompanied the army, were only 180 men under James Soares; and another more detailed account in the third volume, in which the Portuguese force is stated to have been one thousand. Both accounts give the year 1549 as the date of the expedition, and the Burmese history states that it lasted from November 1548 to April, 1549. In the Burmese and Taláing histories, not a word is said as to the leader of the Portuguese, James Soares de Melo, though they speak generally of foreigners. But there is no doubt that the guns, which were worked by the Portuguese, were regarded with great importance by the emperor. The Portuguese history after relating that an illegitimate son of a murdered king of Siam had succeeded to the throne, continues thus:—"The king of Brama, or Pegu, for it is the same, seeing the affairs of Siam in confusion, resolved to conquer that kingdom. He raised an army of 800,000 men, among which were 1000 Portuguese, 40,000 horse, 60,000 musqueteers, 20,000 elephants, 1000 cannon drawn by as many yoke of oxen and Abadas, and 1000 waggons of ammunition drawn by buffaloes. The Portugueses were commanded by James Soares de Melo, called the Gallego, who came to India in the year 1538; in 1542, was pyrating about Mozambique; in 1547, was at the relief of Malacca; and in 1549, being in the service of this king, was worth four millions in jewels and other things of value, had a pension of 200,000 ducats yearly, and the title of the king's brother, was supreme governor of all his dominions, and general of his army.\* The king marched with that

\* The position of Soares is here perhaps exaggerated; but that he held a high

"prodigious multitude, and after one repulse took the fort of Tapuram, defended by 2000 Siamites, putting all to the sword with the loss of 3,000 men. By the way the city of Tuvopisam surrendered, and he sat down before Odiaa, the capital of Siam, which seemed to make no account of that great power. James Soarez, who commanded in chief, surprized hereat, gave an assault and lost 10,000 men. Another attempt was made with elephants, but with no better success. \* \* \* \* \* Five months being spent with the loss of 150,000 men, news was brought that Xemindoo, a man of great parts had rebelled at Pegu and killed 15,000 men that opposed him. As soon as this was known in the camp, 120,000 Pegues deserted, in hatred to that foreign king that oppressed, and to the insolence of James Soarez who commanded them."

It appears that there were some Portuguese in the city under the command of James Pereyra, who served the guns, and probably caused the failure of the attack. Certain differences are apparent in the accounts of the native historians and of the Portuguese, as to the causes which led to the retreat of the Burmese army. The former attribute it to the prudence of the king on seeing the great difficulties before him; and omit to mention the failure of an assault. The insurrection of Xemindoo in Pegu at this time also is not mentioned. But it broke out, according both to the Burmese and Taláing histories, immediately after the return of the army, and possibly the presence of the discontented Taláing soldiers was deemed a favourable opportunity. Before the insurrection, the Burmese history relates that king Tabeng Shwé hti had become utterly incapable from constant drunkenness, the liquor being supplied by a nephew of James Soarez, a youth to whom the emperor had taken a liking, and who was his constant companion.\* At length, Bureng Náung banished this young man from the country, and then took the whole power into his own hands. His father, who was the tributary king of Táungu, had died in the previous year, and one of his brothers or kinsmen had been appointed with the title of Meng Khaung. Bureng Náung was the virtual ruler of the empire, and the acknowledged successor of the emperor, to whom he appears to have been a faithful officer.

It was in the month Pyatho, 911 (December, 1540), according to the Burmese history, that the insurrection of Thamin-htau, or Thaminhtau rá ma, broke out. He is called by the Portuguese 'Xemindoo.' He is represented in the Taláing history as being a son of Binya Ran, the last king but one of the dynasty of Wararu, by an inferior woman of the palace. He had been

post is apparent from the Burmese history, in which subsequently his name occurs as Pits-tsa-rit, with the affix "Meng," or Lord. His miserable end will be seen hereafter.

\* In a royal order, issued not very long ago, degrading an officer of high rank, this historical incident was referred to, as illustrating the evil effects of drinking intoxicating liquor, and the danger of familiar association with foreigners.

a Rahán, but threw off his monastic habit and became a layman. He then took the name of Thaminhtau, and began to collect followers in the delta of the Eráwati, where the Mun race was most numerous, and where a rebel force could most easily avoid attack. He was at first very successful, having taken Dála and even Syriam; he then marched boldly to attack Makau, a fort only sixteen miles south of the capital. Here he was attacked by troops sent from Hantháwati, and was defeated. He retreated to Syriam, where Bureng Náung routed his followers. He fled westward, and Bureng Náung followed him up, and fixed his head quarters at Dála, from whence he sent out parties in all directions to hunt down the fugitives. During this confusion, the emperor was under the care of the governor of Tsit-táung, who had the title of Thamin-tsau dwut, or Thamindurit. He is called by the Portuguese historian 'Xemin of Zatan.' This young man also was a scion of the Shan royal family of Pegu. He had been educated at the same kyoung as Thaminhtau, and was strongly recommended to the emperor by the Phungyí, or abbot, of the monastery. He was soon taken into favour, and was entirely trusted by Bureng Náung. His two younger brothers had appointments in the palace, one being commander of the emperor's bodyguard. The emperor had gone for change to a temporary palace at Pantarau, when a report was brought, no doubt to draw him away to a remote place, that a white elephant had been seen east of the Tsit-táung River, near the ancient city of Kátha. To capture a white elephant at this juncture would have a good effect on the whole people, and the emperor was easily inveigled into the jungle at the foot of the mountains. There he was murdered by one of the brothers of Thamindwut, in May, 1550. The latter at once proclaimed himself king at Tsit-táung, and soon after took possession of Hantháwati, where he was consecrated according to ancient custom.

Tabeng Shwé htí had reigned ten years in Táungu, his native kingdom, and ten years as emperor in Hantháwati. The Taláing history records that he made great gifts to the national pagodas of Shwé-maudau and Shwé Dagon; and that he constructed a road between Pegu and Táungu, with wells, zayáts, and gardens for the use of travellers. This road, which was well raised above the level of ordinary floods, still exists. He built a pagoda at Táungu, which was completed only the year before his death, as has been proved from an inscription on a silver scroll, discovered at that city a few years ago. The pagoda was built for the benefit, by means of the merit acquired by building it, of himself and family, and in memory of his father. He was only thirty-six years of age when he died.

Bureng Náung was at Dála when these events occurred, and finding the strength of the country against him, determined to march to Táungu. On the way he was joined by his wife who managed to escape from the city. When arrived at Táungu, he found that his brother Thi-ha-thu

would not open the gates to him. But all the best officers, Burma, Taláing, and Shan, had great confidence in him, and gathered to his camp. A force sufficient to blockade the city was thus collected. In Pegu, the struggle went on between the two Taláing chiefs, Thaminhtau and Thamindwut. The latter, in possession of the capital, exercised his authority with such cruelty, that the nobles called in his rival, who advanced with an army collected principally at Muttama. A battle was fought near the city in which Thaminhtau was victorious. Thamindwut was taken prisoner and beheaded. He had reigned for three months and a half. These events are thus recorded in the Portuguese history: "Xemindoo (Thaminhtau) rebelled against the king of Pegu (Tabeng Shwé hti), and sent James Soarez to suppress him. He followed him to the city of Cevadi, and he slipping by, got into Pegu,\* because the city sided with him. The queen fled to the castle,† where she was defended by twenty Portuguese till the king came and put the rebels to flight.‡ The army entered the city and put to the sword not only men, women, and children, but even the beasts; nothing escaped, but what was within the liberty of James Soarez his house, which the king had ordered should be exempted.§ Above twelve thousand saved themselves therein. The plunder was unaccountable. James Soarez alone got above three millions. At his intercession, the king pardoned a Portuguese who had furnished Xemindoo with ammunition. Though the king escaped the hands of Xemindoo, he could not the villainy of Ximi-de-Zatan (Ximi is equivalent to a Duke, and he really is one of Satan's creature), who murdered him in the delightful city of Zatan.|| The traitor was immediately proclaimed king, and falling among the murdered Prince's men, killed three of those that belonged to James Soarez, who fled to the city Ova, and afterwards at Pegu was reconciled to this new king, till Xemindoo, who fled before, came on again with a powerful army. Ximi commanded James Soarez and his Portuguese to march with him against

\* The Portuguese historian here confuses Thaminhtau (Xemindoo) with Thamindwut (Ximindezaton). The first did not enter the city of Pegu until he had conquered the last; whereas Thamindwut entered the capital in little more than a month after the murder of the Emperor. Cevadi is Saráwadi, = Tharáwati.

† This may be either the queen of Tabeng Shwé hti or of Bureng. The latter as we have seen soon after joined her husband.

‡ This can only refer to Bureng Náung on his march to Táungu, when, though he was not attacked, he did not venture to enter Pegu city.

§ This sentence can only refer to the taking of the city by Thamindwut, when his army would be sure to plunder the city. The Portuguese historian has been puzzled by the numerous "kings," who in a short time enjoyed that title among the people.

|| Tabeng Shwé hti was murdered some distance from the city, but within the territory pertaining to Tsit-táung (= Zatan).

"the enemy ; but before he came thither, the punishment of his great insolence reached him, as we shall see hereafter. Zatan was taken and beheaded by Xemindoo, who gave out it was for the killing of Soarez, as if the murder of the king had not been a more justifiable motive. Thus the first rebel possessed himself of the crown till Mandaragi,\* the late king's brother-in-law, claimed it in right of his wife, and coming to a battle, gave him such a total defeat, that Xemindoo fled to the mountains where he married a poor fellow's daughter. He discovered himself to her, and she revealed it to her father, at such time as great rewards were proposed to such as should discover him. The father-in-law delivered him up to the king who cut off his head."

In a subsequent part of the history, this story is again told, but with some variations, and the battle between Xemindoo and the king (Bureng Náung) is erroneously represented as having occurred before Xemin de Zatan became king, thus antedating the event by more than a twelvemonth.† The account is extracted, as it relates the fate of Soarez in the city of Pegu, after he became "reconciled" to the usurper. "Xemindoo was of the ancient blood royal of Pegu, a great preacher and esteemed a saint. He made a sermon so efficacious against the tyranny of princes and oppression of that kingdom, that he was taken out of the pulpit and proclaimed king, whereupon he slew 5,000 Bramas in the palace, seizing all the treasure, and in a few days all the strongholds in the kingdom submitted to him. The armies of the two kings met within two leagues of the city of Pegu. That of Brama consisted of 350,000 men, Xemindoo's of 600,000. Of the latter about 300,000 were slain, and 60,000 of the former. The victorious king entered Pegu, and contrary to agreement slew many, and seized great treasures. Meanwhile the city Martavam declares for Xemindoo, killing 2,000 Bramas. Xemin of Zatan did the same in the city of that name. The king marched towards him, but he contrived to have him murdered by the way.‡ This was the end of that tyrant. Xemin was proclaimed king by his party, and in nine days gathered 30,000 men. Chaumigrem,§ brother to the dead king plundered the city and palace, and fled to Táungu, where he was born. Xemin de Zatan became so odious by his ill-government, that in four months many of his subjects fled, and some joined with Xemindoo, who made an army of 60,000 men. Let us leave him awhile to relate the end of James

\* Mongta-ragyi. = Bureng Náung.

† Thaminhtau was defeated at Makau sixteen miles from Pegu, before the other rebel had murdered the king. But that is evidently not the battle alluded to.

‡ As has already been seen, this entirely misrepresents the circumstances under which Tabeng Shwé htf was murdered.

§ Chaumigrem is another name for Bureng Náung, but is here probably meant for his half brother Thihathu, who left the capital when the king was murdered, and retired to Táungu.

"Soarez de Melo, after the wonderful rise already mentioned. James Soarez "passing by a rich merchant's house on the day after his daughter's wedding "and seeing the great beauty of the bride, attempted to carry her away by "force, killing the bridegroom and others who came to her rescue. Mean- "while the bride strangled herself. The father expecting no justice while "that king reigned, shut himself up, and never stirred abroad, till Xemin de "Zatan coming to the crown, he so lamented his wrong about the town, "that above 50,000 of the people gathered about him, crying out for justice. "The new king fearing some worse consequence, caused Soarez to be appre- "hended and delivered up to that rabble. This was accordingly performed, "and the multitude stoning him, he was in a minute buried under a heap "of rubbish. No sooner was that done, but they took the body from under "that pile, and tearing it in pieces, delivered it to the boys to drag about "the streets, they giving them alms for so doing. His house was plundered, "and the treasure found being much less than what was expected, it was "believed he had buried the rest. The new king, Xemin de Zatan, soon "followed James Soarez, for his subjects no longer able to bear his cruelty "and avarice, fled in great numbers to Xemin-doo, who was now master of "some considerable towns. He marched to the city of Pegu with 200,000 men "and 5,000 elephants. Zatan met him with 800,000, and the fight was "long doubtful, till Gonsalo Neto, who with 80 Portugueses followed "Xemin-doo, killed Zatan with a musket shot, which opened the way for "Xemin-doo into the city, where he was crowned on the 3rd February, 1550. "Gonsalo Neto received 10,000 crowns for that fortunate shot, and his "companions 5000."

It may be well here to explain how the Portuguese historian has failed to recognise Bureng Náung when mentioned under other names or titles. He probably drew information from letters and reports sent by many different officers through a long series of years to the Viceroy at Goa, and these were not used for the history until about a century later. Bureng Náung was for ten years the general of the armies of Tabeng Shwé hti, and afterwards his successor. When he became emperor, he assumed different titles at different periods, and the writers of reports regarding him probably used these different titles, so that it would not be possible without some key to understand that they all referred to the same person. The term Bureng Náung is rendered 'Branginoco' by the Portuguese, and in some accounts his actions, under this title as general, are attributed to him as king. Mandaragi is a common title for a king, used in conversation. The term 'Chaumigrem' is for Tsheng-phyu-mya sheng, = Lord of many white elephants, one of the later titles assumed by Bureng Náung. The letter 'u' in Chaumigrem, is a misprint for 'n.'

In another part of the Portuguese history, as we have seen, it was



stated that "Zatan was taken and beheaded." Yet the fortunate shot of Gonsalo Neto is told very circumstantially and can scarcely be an invention. Perhaps the wound inflicted led to his capture.

Thaminhtau was now declared king, and was consecrated after the ancient custom in the capital. He is henceforth called in the Taláing history 'Dzag-ga-li Meng.' The Taláing historian dwells fondly on the details of the consecration, which was the last received by a native sovereign in Pegu.

While these events were passing in Pegu, Bureng Náung had forced the city of Táungu to surrender. He forgave his half-brother Thihathu, who had refused to acknowledge him, and had taken the title of Meng Kháung. Bureng Náung then caused himself to be consecrated king, as successor to his father who had been tributary king of Táungu under the late emperor. He next determined to possess himself of Prome, where another of his brothers had, under Tabeng Shwé htí, been tributary king, but of which a noble, styled Thadothu, had possessed himself. He marched across the hills, and after some delay Prome was surrendered by treachery, and Thadothu was put to death. His brother Thado Dhammá Rádzá was then reinstated as tributary king. It was now the year 913 (A. D., 1551), and Bureng Náung had possession of Táungu, Prome, and the country of the Eráwati as far north as Pugán. In Ava, a struggle for supremacy was still going on among the Shan chiefs, and Bureng Náung deemed the time propitious for asserting his claim to that kingdom as the successor of Tabeng Shwé htí. But hearing of attacks from the Pegu side on his territory, he considered it prudent first to settle affairs there, and concentrated his forces for that purpose at Prome and Táungu. Just then Mobyé Meng, king of Ava, being conquered by Tsithu-kyau-hteng, had fled and taken refuge in Prome. Bureng Náung determined to invade Pegu from Táungu, and marched to that city, taking Mobyé Meng with him. He set out on his expedition in April, 1551. His army consisted of 110,000 men, 400 fighting elephants, and 5000 horses.

In Pegu Thaminhtau, according to the Taláing history, had entered the capital in August, 1550. Having placed his own adherents in the several districts of the delta, he, in November, marched against the governors of Martaban and Maulmain, who had refused to submit. Having subdued both without difficulty, he returned to Hantháwati. He received an embassy from the king of Arakan, and did everything possible to make himself popular, and above all, to acquire religious merit by gifts to the pagodas and monasteries. But hearing of the surrender of Prome to Bureng Náung, he knew he would soon have to fight for his kingdom; and it was not long after, that news was brought that Bureng Náung himself was marching down by land from Táungu, and that a force under the king of

Prome was coming by water. He determined not to await attack in the city. The army took post at Muanu to await the Burmese enemy, and the battle took place close to the capital. A portion of the city was set on fire during the engagement by a force detached for that purpose by Bureng Náung, in order to alarm the enemy. Thaminhtau fought with courage, but his army was defeated, and he was obliged to leave his elephant, and mount a horse to fly from the field. He fled to Dala. Bureng Náung entered the city on the following morning. The battle was fought in the latter end of April, 1551. There probably were Portuguese on both sides in this battle, but no detailed account of it is to be found in the Portuguese history. The clearest reference thereto is in the following passage—"Chau-migrem who, the year before, retired to (from) Pegu, hearing afterwards that Xemindoo was unprovided, marched against him, and obtaining the victory, brought that crown again under the subjection of the Bra-maes. Xemindoo, taken some time after, was publicly beheaded." And again we read in another volume—"The first rebel possessed himself of the crown, till Mandaragi, the late king's brother-in-law, claimed it in right of his wife, and coming to a battle, gave him such a total defeat that Xemindoo fled."

Most of the Talaing nobles submitted to the conqueror. On the third day after the battle, Bureng Náung started in pursuit of Thaminhtau, who was striving to rally his followers in the forests of the delta. Being at last compelled to fly, he once more assumed the dress of a Phungyí, or Buddhist monk, and took refuge in the district of Basscin. From thence he found means to fly with a few followers by boat to Muttama.

Bureng Náung remained at Basscin until August, 1551, settling the affairs of that part of the country, and then returned to Pegu city. His first care was to repair the holy buildings injured during the war, and he built a Dzé-di over the remains of Tabeng Shwé-hti. Not long after, the unfortunate Thaminhtau, having been betrayed, was brought in. Bureng Náung offered him his life, if he would make obeisance; but this, the Talaing history states, he refused to do, and he died of a wound he had already received. The Portuguese account says that he was beheaded; and the Burmese historian merely observes, "An evil-minded man, had an evil death."

Muttama having now been occupied, another of Bureng Náung's brothers was made tributary king with the title of Meng-re-tsi-thú. Bureng Náung assumed the title of King of Kings or Emperor; and his eldest son was declared Mahá Upá Rádzá, or Crown-prince. The emperor ruled over a wide extent of country, and prepared to assert his claim to the throne of Ava; for as the successor of Tabeng Shwé-hti he assumed the title of king of the Burma race, though neither of them had reigned in the country of Burma proper. An army was sent up the Eráwati in July, 1553, under the

command of the Crown-prince. Either this was intended only as a reconnoitring expedition, or the strength of the king of Ava, Tsi-thú kyau hteng, had been miscalculated. The Crown-prince advanced no further than Pugán, and was then recalled.

During this year great exertion had been made to build the palace, which was completed in November, when a grand festival was held. The emperor was then, as stated in the Taláing history, consecrated according to the ancient ceremonies. Numbers of boats were being built in all parts of Pegu, and provisions were collected along the Eráwati as far as Pugán, with a view to an advance to Ava. In July 1551, the son and the nephew of the king of Arakan arrived. The latter was married to one of the emperor's daughters, and the former to a daughter of the king of Muttama. In November, the army of invasion set forth. The Crown-prince was left at the capital as his father's representative. The army in two main columns, one of which accompanying the flotilla, proceeded up the Eráwati route. The other with which was the emperor, marched from the capital to Táungu. From that city, the emperor led a corps across the hills to Táung-dwen-gyi, and on to Pugán, where they joined the water column. The remainder marching from Táungu under the emperor's brothers, Meng Khaung, king of Táungu, and Meng rai kyau hteng, entrenched themselves to the south of the ancient capital Pányá, to await intelligence from the emperor. The main army by means of the flotilla crossed the Eráwati to the western bank, probably because provisions were more plentiful there than on the other. The march was continued along the right bank, and up the Khyendwen to Amyen, where that river was crossed. The army then marched to Tsagáing, situated on the Eráwati opposite to Ava. The emperor's first care was to communicate with his brothers who were entrenched near Pányá. Arrangements for an attack on the city having been made, the two brothers issued from their entrenched position, but were at once attacked by Tsithu-kyau-hteng, the king of Ava. He was, however, defeated and forced to retire into the city. The emperor's army now crossed the river, and a combined attack was made. Ava was taken in March 1555, and the king, the last of the Shan dynasty, was made prisoner. He was well-treated and sent to Pegu. But two sons of the last native king of Pegu who were found here, were put to death. The emperor's brother Meng-rai-kyau-hteng was made tributary king of Ava, with the title of Tha-do-meng-tsau. The emperor delighted to continue Hantháwati as the capital of his empire, but determined to remain at Ava until the northern Shans were subdued.

It is much to be regretted that the Portuguese historian gives no account of this expedition, though it is almost certain that Portuguese are alluded to in the Burmese history, which speaks of four hundred Western

foreigners dressed in uniforms and armed with muskets, whose position was in front, flanks and rear of the emperor's elephant. In the following passage, however, the Portuguese historian no doubt alludes generally to the conquests of Bureng Náung, including the campaign of Ava. The "kingdom of Pegu, before not very considerable, was raised to be one of the greatest empires in Asia, by the king of Uva and Brama, assisted by 1,000 Portuguese under the command of Antony Ferreyra de Braganca, who served him as his natural prince."

Columns were despatched into the country north of Ava, and the emperor himself proceeded to Myé-du on the Mú River. But the rainy season being at hand, and the troops worn out with fatigue, it was deemed expedient not to advance further at this time. A garrison was placed there, and the emperor himself returned to Ava, and thence to Pegu, where he arrived in June, 1555. The new king of Ava remained in his capital.

The emperor had before determined to build a fortified post at or near the ground where he had defeated Thammihtau, and it was completed in this year. This is referred to by the Portuguese historian in the following words: "The king, not thoroughly satisfied with the people of Pegu, built, not far from it, another great and strong city." The emperor was careful to observe what was required of him as a good Buddhist. Additional gold was placed upon his father's pagoda at Táungu, offerings were sent to the holy tooth relic in Ceylon, communication having been opened with Dhamnápála, the king of that island. A scandalous custom which had hitherto prevailed, of annual sacrifices of animals to the Náts of the Mountain Pup-pa, which had existed from the time of the kings of Pugán, was suppressed as contrary to religion. In the Burmese history, it is stated that many thousands of people used to assemble annually to sacrifice bullocks, buffaloes, pigs, and other animals on this occasion.\*

About this time the Tsaubwá of Unbáung having died, a dispute occurred among the relations as to the succession. The member of the family who succeeded was then attacked by the Tsaubwá of Moné, and he appealed to the emperor for assistance. The emperor deemed this an excellent opportunity for subduing the whole of the Shan country, and determined first to proceed against those in the north. A large army under the king of Táungu was assembled on that frontier to watch the southern Shans; while the emperor himself proceeded with his whole court to Ava, where a large army was also assembled. He arrived there early in 1557, and soon after proceeded up the Eráwati to Tsampanago, where his army was assembled. He then marched to Momeit, the Tsaubwá of which state had joined the enemy, while the king of Ava and other commanders proceeded against

\* Similar customs still exist in some remote parts of the country, though utterly contrary to Buddhism.

Unbáung. The whole of the country east of the Eráwati was subdued and annexed to the kingdom of Ava. As many heretical customs existed among the Shans, the observance of these was prohibited. On the death of a Tsaubwá, it had been the practice at his funeral to sacrifice his riding elephant, his horse, and his favourite slaves, and bury them in one grave with him. This was in future strictly prohibited. Pagodas for worship were erected; kyoungs were built, and orthodox monks placed in them, in order that religious duties might be exemplified and observed. Weights and measures were introduced in accordance with those existing in Hantháwati, and officers of justice appointed. Thus did the emperor provide for the temporal and spiritual welfare of the people. The emperor then determined to march against Modyin and Mogáung, which had formerly been subject to China.\* For this purpose, he crossed to the west bank of the Eráwati, and after an arduous march north subdued both those states. The Mogáung Tsaubwá swore fealty, and the Monyin Tsaubwá was taken as a hostage, his son-in-law being appointed chief. The same reforms were introduced into these states, which had been enforced in Unbáung and Momeit. The emperor had now subdued the country as far north as the Patkoi range of hills, which separates Burma from Ásám. He returned to Ava, and from thence proceeded to Pegu, which he reached in August, 1557.

But already another disturbance had arisen among the restless Shan chiefs. The Moné Tsaubwá had attacked the chief of Thí-bá. The emperor determined to punish both. In November, he marched to Táungu and across the mountains towards Moné. Many Tsaubwás had united their forces, but were defeated. The emperor pardoned the Moné chief on account of his youth; but in this and the adjoining states the reformed worship was introduced. These states received the name of Kambaudza, or this ancient name was now revived.

The emperor now held a council as to future proceedings. It was agreed that, as all the northern Shan states west of the Than-lwin river, except Thinní, had been subdued, nothing should at present be attempted in that direction. Thinní was still subject to China, and should not be interfered with. But it was determined to march against the Ywun Shans of Zimmé, after which it would be easy to occupy the country of the Gun or Gyun, Kyáing-run and Kyáing-tun, with other neighbouring states bearing collectively the classic names of Mahánágora and Khemáwára. The army was at once put in motion from Moné, and made twenty-four marches to

\* The northern Shan states in the valley of the Eráwati had, no doubt, been tributary to China. In the sixteenth century, the Ming dynasty had become weak, and the Manchoos had begun to assail the empire. It was these circumstances, probably, which determined Bureng Náung to attack these out-lying districts of the Chinese empire.

the Hta-tseng-tsheik on the Than-lwin, where that river was crossed. From thence twenty-one marches brought the invader to Zimmé. The king of that country had determined to defend himself in his capital, which was well provided with jinjáls. The emperor, however, had so large a force with superior artillery, that he surrounded the city and compelled a surrender. The king swore fealty, the emperor asking him if even the great ruler of China could help him. He agreed to pay an annual tribute of elephants, horses, silk, and other natural products of his country. Many artificers with their families were carried away to Hantháwati. No religious reforms were considered necessary. An army of occupation, numbering fifty thousand men, was left in Zimmé, and was placed on the frontiers of Siam and Leng-dzeng. The emperor then set out on his return to Ava. Being suspicious of the conduct of the Tsaubwás of Mong, Ngyáun-ywé, and other states, they and their families were detained as prisoners. The Tsaubwá of Thinní appeared with presents, but was not required to make his submission. The emperor arrived at Ava, in August, 1558. There he remained settling the country and repairing the religious buildings. All the Tsaubwás in the hills east of Bamau appeared and did homage. While thus engaged, news was brought that the king of Leng-dzeng\* was assembling a force, to attack the Burmese army in Zimmé. The king of Ava was at once sent with reinforcements, and he forced the king of Leng-dzeng to retreat. Some cities nearer to the Mc-kong River were now occupied, and the king of Ava was then recalled. The emperor returned to Pegu in May, 1559.

He had before commenced the foundation of a pagoda, and the work was now pushed on. Numbers of supposed holy relics were placed in the relic chamber, with golden images of the family of Budha and his disciples, and of the royal family. The religious zeal of the emperor did not stop here. He was shocked at the number of animals put to death by the Muhammadans at the capital and other cities. Those people seemed actually to rejoice in taking the life of a goat or a fowl. The emperor desired to put an end to such sinful deeds. He built a magnificent Tatsháung, or place of assembly, and ordered the foreign people to attend. The true religion was then preached by the royal teacher, and numbers of the foreigners embraced the doctrine of the three treasures.†

\* Leng-dzeng is the Burmese name for the ancient Laos kingdom, east of the Mekong, or river of Cambodia, of which either Muang Luang Phuban, or Vion Chan, called also Lantchiang, was the capital. It is now subject to Siam. See Captain McLeod's Journal, p. 39, and Travels by Louis de Carné, p. 125.

† There are in Pegu a number of families who are Buddhists and in no way distinguishable from the people of the country, but who state that they are of foreign origin. They bury their dead and erect tombs over them; and they abstain from eating pork. In other respects, I am not aware that they have any peculiar customs. It is probable they are descendants of those converted by Bureng Náung, whose

The empire enjoyed rest for nearly three years. The chief of Kathé (Manipur) indeed made an encroachment on the territory of the Kale Tsaubwá, but this was soon settled. About the middle of the year 924 (A. D. 1562), a more serious attack occurred. The Tsaubwá of Mo-mit reported that some of his frontier villages had been attacked by the Tsaubwás from Ho-tha, Tsánda, and other states eastward of Bamáu. The emperor called a council, and observed he had no doubt but that these Tsaubwás depended on the assistance of the emperor of China, but, as before the destruction of Púgán, all that country was a part of the territory of that kingdom, he should punish this aggression. He sent an army under the three tributary kings of Ava, Prome, and Táungu, and his son, the crown-prince. The Tsaubwás then all appeared at Bamáu and swore fealty to the emperor. The religious reforms were introduced; pagodas and kyoungs were built, and orthodox phúngyís sent, in order that the four monthly worship days and other religious duties might be carefully observed. Times of payment for the royal revenue were fixed, and once in three years the Tsaubwás themselves were to come to the royal feet. Later in the same year, it was discovered that the Tsaubwá of Tanenthari had been sending presents to the king of Siam, and a small force was sent to supersede the Tsaubwá. But the commander was wounded and the expedition was a failure.

The emperor still had his designs against both Siam and Leng-dzeng, but was willing to forego them if the king of Siam would be reasonable. In open court he observed that in the time of the younger brother, (so he now designated Tabeng-Shwé-htí), Siam was a tributary country; that he neither wished for war, nor did he wish to worry his officers and the army; but the king of Siam had four white elephants and ought to present one. This appeared to his ministers and courtiers only reasonable. Messengers were, therefore, sent and the king of Siam was reminded that, in ancient times, his ancestor had presented a white elephant to Wareru, the king of Pegu, to whose rights the emperor had succeeded. The reply of the king of Siam, veiled in ambiguous terms, was interpreted as a refusal, and the emperor determined to march on the capital of his enemy. According to the Burmese history, the army consisted of four great corps, each under one of the three northern tributary kings and the crown-prince. Each corps consisted of 140,000 men, 400 fighting elephants, and 5,000 horses. The emperor's own guards under his immediate command consisted of 40,000 men, 400 fighting elephants, and 4,000 horses.\* The army was composed measures for attaining the object in view were probably not so mild as is represented in the history.

\* The Portuguese historian gives no details of the march of the invading army, and, it is probable, did not clearly distinguish the two sieges of the capital of Siam by

of men from all parts of the empire, Pegu, Burma, and the most distant Shan states. The plan of the campaign was for the several corps to march on Zimmó, those starting from Pegu getting as far to the north as possible, and none proceeding from Muttama by the route eastward, which was the route followed by Tabeng Shwé hti in 1548. From Zimmó it was intended that the river should be used to convey stores for the army down to Yodayá, the capital of Siam.

The main army left Hantáwati in November, 1563, and marching up the valley of the Páung-láung River as far as Táungu, passed the eastern mountain range at various points. The several corps were assembled at Zimmó or the neighbourhood, but the king of that country had refused to join the expedition and absented himself. All the places of strength in the territory of Zimmó had to be besieged, though some surrendered on being summoned. The invader thus occupied Tháuka-tó, Pithaláuk, and other cities, and Au-ga-dhammá Rádzá, a son-in-law of the king of Siam, was taken prisoner. Negotiations were now opened with the king of Siam, but he refused to come to terms. The invader gradually approached the capital Yodayá, and invested it on all sides. But it was necessary first to get possession of three ships mounted by Portuguese, which were moored in the river for the defence of the city, and were supported by batteries on shore. With great difficulty and loss these batteries were stormed, and the ships surrendered. The foreigners, it is said, were taken into the emperor's service. The king of Siam, disheartened at the loss sustained, now consented to appear before the conqueror, and though he was not required to do homage as a subject, he was dethroned, and his kingdom reduced to a tributary state. The king and his queens were carried off as prisoners and hostages, together with his younger son, styled Brá-rá-ma-thwun. The elder son, styled Brá-ma-hin, was made tributary king of Siam; the king's son-in-law and other members of the royal family were appointed governors at Pithaláuk, Tháuk-kató and other cities. These arrangements were made in March, 1564, and the emperor, after making all arrangements at Yodayá, set out with his prisoners for Pegu, where he arrived during the following June. He brought away three white elephants and numerous artificers.

The Portuguese historian, in the 3rd volume of his work, records these events in the following words, in which some errors will be observed: "For the conquest of Siam he led a greater force, possessed himself of the kingdom, and took the king and his two sons, called by reason of their

Bureng Náung, as well as that during the reign of Tabeng Shwé hti, when he was general. The following passage in the third volume appears to refer to the invasion now related: "The war began again between Chaumigrem, king of Pegu, and him of Siam. The army of Pegu consisted of 100,000 men, among whom were many Portuguese, and 17,000 elephants. All this army came to ruin."



"different colour, one the black, the other the white. He was content to leave that king in possession of the crown as his vassal, having himself been till then his subject,\* carrying away his two sons as hostages. Branginoco returning victorious to Pegu, entered the city in triumph, many waggons going before loaded with idols and inestimable booty. He came at last in a chariot with the conquered queens, loaded with jewels, at his feet, and drawn by the captive princes and lords. Before him marched two thousand elephants richly adorned, and after him his victorious troops."

The emperor, notwithstanding this victory, was dissatisfied that nothing had been done to punish the king of Zimmé for his defection. He had retreated eastward, and was sheltered by the king of Leng-dzeng. Another large army was collected, and among the imperial guard and artillery one thousand Muhammadans and four hundred Portuguese are mentioned in the Burmese history. The emperor himself left the capital in November 1564, and proceeded to Labong, near Zimmé. A column under Binya Dála, an officer high in repute, took a southern route by Yaháing. All the Tsaubwás of the Yun tribe were anxious to support the independence of the king of Zimmé, but he himself came to the emperor and voluntarily submitted, saying that he did not wish to reign longer. He with his queen and their attendants then followed the emperor's camp. Troops were sent into the country east of Zimmé, to subdue the several petty chiefs.

While the emperor was thus engaged, a rebellion broke out in Pegu, headed by a Shan captive named Binya Kyan, with numerous Shan prisoners, and in which thousands of Taláings joined. They marched towards the capital, and the officers in command there were so alarmed, that they were on the point of sending off the empress and the whole of the royal family to Táungu for safety. They, however, took the advice of the deposed king of Ava, Narapati Tsithu, who pointed out that most of the rebel force were mere unarmed rabble, and might be easily checked. The ex-king was intrusted with a force, and went out and defeated the rebels close to the city. The leader was killed, and the rest fled into the thick woods of the delta. As soon as the emperor heard of this outbreak, he hastened back from Zimmé with a small force, and reached the vicinity of the city in June, 1565. Seeing that all the magnificent kyáungs and other buildings outside the city walls, which he had erected at vast expense, had been burnt by the rebels, he was so enraged, that without entering the city, he proceeded on to Dala to hunt them down. The king of Prome who had accompanied the emperor from Zimmé, was employed on this service; the rebels were utterly defeated, and several thousands of them taken prisoners. The whole of these the

\* This apparently refers to the erroneous idea before mentioned, that Táungu had been tributary to Siam.

emperor intended should be enclosed in a vast temporary building of inflammable materials, and burnt alive as rebels according to Burmese law. The Burmese and the Taláing histories, however, both state that on the intercession of the Buddhist monks, Burmese, Taláing, and Shan, he pardoned all except the leaders, and those who had accepted titles from the rebel chiefs.

The emperor's eldest son, the crown-prince, had been left in command in the Yun country, and found great difficulty in subduing the chiefs, east and north-east of Zimmé. At length, they were driven to shut themselves up in Maing-zán, in which also was the king of Leng-dzeng and his family. The town was taken, and all were captured except the king of Leng-dzeng, who escaped in the confusion. The crown-prince leaving his sick and wounded in the town, followed up the fugitives, but the Burmese army suffered from want of food and long marches, and after much loss was forced to return to Maing-zán. The crown-prince then sent to Pegu all who were able to travel, with a report to the emperor of the difficulties encountered. Orders were at once issued for the return of the army, and the crown-prince reached Hantháwati in October, 1565. The queen of Leng-dzeng, and the whole of the prisoners of high rank, were brought and placed in the palace.

The emperor now occupied himself in building new city walls and other public works. The outer wall or rampart was a square of seven thousand yards on each face. There were five gates on each face, each gate being constructed by a tributary king and called after him. A new palace was likewise built, to which the tributary kings contributed materials. The whole was finished in March, 1567, when a grand festival was held.\*

The last expedition of the emperor against the king of Zimmé appears to be referred to in the second volume of the Portuguese history in the following words: "Then he marched with an army of 1,600,000 men and overran many neighbouring countries. But another rebellion breaking out at Pegu, the queen was forced to fly to the castle, chiefly relying upon thirty-nine Portuguese, who defended her till the king came and vanquished the rebels. Then the king sent an officer to bring those men who had defended the queen to his presence. He brought him some Moors of note. But the king knowing the Portugueses were the men, said in anger, 'I sent you for men, and you bring me cowards; go, bring me men.'

\* Of this palace the Portuguese historian writes: "He built a palace as big as an ordinary city. The least part of its beauty was rich painting and gilding, for the roofs of some apartments were covered with plates of solid gold. Some rooms were set with statues of kings and queens of massive gold, set with rich stones, as big as the life. He was carried on a litter of gold upon many men's shoulders, the reverence paid him was more like a God than a prince." He called this palace, which was a vast collection of grand pavilions, Kambauza détha after one of the Buddhist countries of India.

"The Portugueses being brought, he bid them ask whatever reward they would, and they with the surprise doubting, the king loaded them with "riches, praises, and honours."

In the Burmese and Taláing histories, the Portuguese are not mentioned as contributing to the suppression of the rebellion in 1565. Although it is stated that the officers in command, during the emperor's absence, were utterly bewildered, the whole credit is given to the deposed king of Ava, and to an officer commanding a body of light troops detached by the emperor from Zimmé, and who advanced by forced marches on the capital. But it is evident that in the native histories, the services rendered by the Portuguese are systematically suppressed, and there appears no reason to doubt the truth of the anecdote above related.

The king of Leng-dzeng continued to make demonstrations against the towns in the Zimmé territory held by the emperor's officers. But his son-in-law came in and made his submission. Everything now looked promising. The capital was crowded with people, and was a scene of constant bustle and alacrity. But suddenly rice became scarce, which caused much suffering. The deposed king of Siam became a Rahan, and was permitted to go to his own country to worship. His son Bra-rá-ma-thwun had died, and his widow was allowed to return to Siam with her children. The tributary king of Siam now begun to take measures for once more being independent, and in this was supported by his father. But his brother-in-law, who was governor of Pithaláuk, would not join them, and leaving his government, came to Hantáwati with his family, where he arrived in June, 1568. The emperor saw that another invasion of Siam would be necessary, and began to make preparations. But as the campaign could not commence in the rainy season, he contented himself with strengthening the garrison of Pithaláuk and the king of Siam's son-in-law was sent back there. The reigning king of Siam determined to attack Pithaláuk at once, and the king of Leng-dzeng appeared with an army to help him. But the garrison resisted all their efforts by land and water. Their force became so reduced, that they at length drew off to a distance.

The emperor had collected even a larger army than before to march against Siam. It consisted of 5,300 fighting elephants, 53,000 horses, and 546,000 men. In the emperor's bodyguard were 4,000 Portuguese, and 4,000 Muhammadans, all armed with muskets, and cannon in great numbers. The army marched in October, 1568, and in forty-seven marches had reached sufficiently near Pithaláuk to relieve that place. The old king of Siam who had been deposed, appears to have resumed his position, having thrown off his monk's gown. He had made great preparations for the defence of the city, and his son Brámahin who had resigned power to his father, nobly seconded him. On the upper Menam and its tributaries, the emperor

collected numerous boats to convey stores of all kinds for the army on its march down to the capital. The commander under the emperor was Binya Dala, through whom all orders were issued. A portion of the army remained in the upper Menam to plant rice when the rain began to fall, in case there should be a scarcity lower down. The army invested the capital without any resistance. The emperor had determined to reduce it by famine. But after four months, that is, in May 1569, little or no effect had been produced. At this time the old king of Siam died, and his son Brámahin made some overtures for surrender, but these were not accepted. The losses in the Burmese army had been very severe, and the emperor becoming anxious, put two of his superior officers to death for neglect of duty. At this time, the king of Leng-dzeng approached with an army to relieve the capital. The emperor leaving Binya Dala in command, himself proceeded with the crown-prince and other officers, and a battle was fought in which the Laos king was defeated. The king now returned to renew the siege. Affairs had become very serious and the emperor had recourse to a stratagem. One of his Siamese supporters, a noble of high rank, pretending to desert, entered the city with irons on his legs. He was received with joy by Brámahin, and appointed to a high command. In pursuance of his treacherous design, he maintained a correspondence with the emperor, and opening one of the city gates allowed the enemy to enter. The city was taken in August, 1569, after a siege of seven months. It was given up to plunder. The unfortunate king Bráhmahin was made prisoner.\* The emperor remained in the city of Yodaya for two months, and appointed Tháung-kyi, a member of the Zimmó royal family, tributary king of Siam. In a council of all the principal officers, it was decided, that it was now essential that the king of Leng-dzeng should be followed up. Sending back all surviving disabled men to Pegu, and an immense quantity of plunder, the emperor himself proceeded up the Menam, and fixed his head quarters at Pithaláuk. From thence the several divisions of the army marched eastward. After a long and tedious march, the emperor encamped on the right bank of the Mekong, opposite Máing-zán. Nothing had been heard of the corps commanded by the crown-prince and other generals. Orders were issued to fell trees, to prepare boats and rafts, to cross the river. A bridge of boats was at last made by which the army passed, and the enemy deserted Máing-zán. The other divisions, after great sufferings, had crossed the river some distance to the north, and now marched down to join the emperor. Máing-zán being made a depôt for stores and the sick, the king of

\* Nothing more is said of this king in the Burmese history. Both that and the Taláing history dwell on the death of the old king and of the generosity of the conqueror in giving him a grand funeral. His son, it would appear, committed suicide, as we learn from an old Venetian traveller quoted hereafter.

Táungu was left in command, while the rest of the army under the emperor marched in pursuit of the enemy. The Leng-dzeng king was too wary to come to an engagement, and the invaders were wearied with long marches and want of food. At length, they returned to Máing-zán, and the whole army re-crossing the Mekong reached Pithaláuk, in June 1570.\* From thence the emperor reached Hantháwati in the following month. Of the original army which marched to subdue Siam, very few survived.

The emperor's first care after his arrival was to make rich offerings to the pagodas; to cast fresh images in precious metals, and to complete a new Hlwut dau, or royal council chamber, within the palace. He had turned his attention to foreign trade by sea, and built a ship of his own, which he sent loaded with merchandize to Melaput (?) and other ports of Ceylon and Southern India. In 1571, a rebellion of the northern Shans of Mo-gáung and Monhyin occurred. A force under the crown-prince and the king of Ava was sent against them; but the Tsaubwás could not be found, and the army was recalled. During this interval, the king of Leng-dzeng for some unexplained reason made an attack on a city belonging to Cambodia,† and was killed. One of his nobles usurped the throne. But the emperor, who had the deceased king's brother, named Ubarit, at his court, determined to support his claim, as he consented to become a tributary. An army was sent under the great general Binya Dala, to place him on the throne, but the expedition was unsuccessful. He was either put to death or sent into exile to a sickly place where he died. Binya Dala appears to have been a native of Pegu, but probably of Shan descent.

The last expedition of Bureng Náung against Siam, and afterwards into Laos, is related by the Portuguese historian in such a manner, that he appears to assert that the city of Yodayá was not taken. The fact of its surrender, however, admits of no doubt, though from the great loss sustained by the besiegers, it probably would not have fallen, had it not been for the treachery which has been related. De Sousa, after relating the capture of the Siamese princes in the first siege, but apparently not knowing that their father, the senior or first king of Siam was carried off as a hostage, proceeds thus: "After some time, the two brothers asked leave of the king to visit their father, which he granted, and afterwards sending to demand the usual

\* This is probably a mistake for June, 1569, as will be seen farther on.

† Cambodia is called in the Taláing history 'Khameng,' probably a corruption of the native name Khmer. Cambodia seems to be the Portuguese form of Kamphoutche, which itself is probably derived from Kambauza, the name of an ancient Buddhist country of India. All the Indo-Chinese nations have been in the habit of calling their cities after famous Indian cities. A portion of the Shan country was also called Kambauza, and the country east of Bamán was named Kosambi, which in popular language has been changed to Ko Shán pyí. Yodayá, the capital of Siam, is the Indo-Chinese form of the famous city of Ráma.

"tribute, the black Prince refused to pay it. The king in a rage sends his "great favourite Banna, with a powerful army against him. Banna ravaged "the country of Siam, and besieges the Prince in Hudixa, who defended it "so bravely, that Banna being forced to draw off, he fell upon and totally "defeated him. The king sends his brother-in-law with a greater power, and "he receives a greater overthrow; 200,000 of his men were cut in pieces "with a great number of elephants and horses, many more of both taken. "The black Prince remained victorious, his men were enriched and all en- "couraged to follow their good fortune. The king of Pegu raises another "army of 1,700,000 men, 1500 elephants, 80,000 horses, and all necessaries "proportionable. The command of it he gave to Mapa Raja\* his son, with "the title of king of Siam, not doubting of the victory. At the news of this "power, all Siam trembled except the valiant black, now king, who met his "enemy and gave him battle. The two kings encountering on their ele- "phants fought, and he of Pegu was cast dead off his elephant, at which "sight his men fled and the Siamites pursued them a month, destroying the "greatest part of that vast army."

This account seems to mix up the three or rather four separate expedi- tions which we have given from the native historics. The first against Yodayá, where, though Bureng Náung was victorious, it was with immense loss; the two expeditions into Leng-dzeng, the last being under Binya Dala and both unsuccessful; and that, to put down the insurrection of the north- ern Sháns, under the crown-prince, which was also a failure.

Some light is thrown upon this period of the history by the narrative of Master Cæsar Fredericke, the Venetian, who, as translated in Purchas, states as follows:† "Sion, or Siam, was a great city, but in the year 1567, it was "taken by the king of Pegu. The number of his army was a million four "hundred thousand men of warre. I was in Pegu six months after his "departure, and saw when that his officers that were in Pegu sent five "hundred thousand men of warre to furnish the places of them that were "slaine and lost in that assault. Yet for all this, if there had not been "treason against the citie, it had not been lost; for on a night there was "one of the gates set open, through the which with great trouble the king "gate into the city, and became governor of Sion; and when the emperor "saw that he was betrayed, and that his enemy was in the city, he poisoned "himself; and his wives and children, friends and noblemen that were not "slain in the first affront of the entrance into the city, were all carried

\* This means Upa Rádzá—the Yuvaraja of the ancient Hindus,—which was the title Bureng Náung conferred on his eldest son. It is equivalent to Ein-She Mong of the present day.

† Cæsar Fredericke, seems to have been in different parts of Pegu during 1567, 1568, and 1569.

“captives into Pegu, where I was at the coming home of the king with his triumphs and victory; which coming home and returning from the wars, was a goodly sight to behold, to see the elephants come home in a square, laden with gold, silver, jewels, and with noblemen and women that were taken prisoners in that city.”

It will be remarked that there is a difference of one year in the date given in the Burmese history, and that by Cæsar Fredericke as to this invasion of Siam. The difference is extended to the date of “the coming home of the king,” which the Venetian traveller apparently places in 1569; and the Burmese history in 1570, after the conclusion of the expedition into Long-dzeng.

Cæsar Fredericke visited Martaban where, as he states, “we found ninety Portugals of merchants and other base men, which had fallen at difference with the Rector or governor of the citie. At that time, the city was empty of men, by reason they were gone all to the warres, and in business of the king.”

He then proceeded to Pegu, “which are two cities, the old and new. In the old city are the merchant strangers, and merchants of the country. The merchants have all one house, or Magason, which they call ‘Godon,’ which is made of bricke, and there they put all their goods of any value. In the new city is the palace of the king, and his abiding place with all his Barons and Nobles, and in the time that I was there, they finished the building of the new city. It is a great city, very plain and flat, and four square, walled round about, and with ditches that compass the walls about with water, in which ditches are many crocodiles. It hath no draw-bridges, yet it hath twenty gates, five for every square, on the walls. There are many places made for centinels to watch, made of wood, and covered or gilt with gold. The streets thereof are the fairest that I have seen; they are as straight as a line from one gate to another, and standing at the one gate you may discover the other; and they are as broad as that ten or twelve men may ride abreast in them. And those streets that be thwart, are fair and large. The houses be made of wood and covered with a kind of tiles in form of cups. The king’s palace is in the middle of the city, made in form of a walled castle, with ditches full of water round about it. The lodgings within are made of wood, all over gilded, with five pinacles, and very costly work covered with plates of gold.” The whole of this description of the city of Hantháwati, and of the palace, would answer for the present capital Mandalé, except that the streets of the latter are broader than is here indicated, and that the palace wall has no ditch. The traveller gives an intelligent description of the army of the king of Pegu; of the war elephants; the “good ordnance made of very good metal;” he hath “eighty thousand harquebusses, and the

number of them increaseth daily ;" the rest of the soldiers are armed with bows and arrows, pikes and swords, " but their armour and weapons are very naught and weak ;" this was compared with the European armour and heavy pikes of the period. The account given by this observant traveller shows that the native histories do not exaggerate his power and magnificence. Indeed, they state the number of his soldiers much below that given both by the Portuguese historian and the Venetian. The latter concludes this part of his narrative by stating—"The king of Pegu hath not any army or power by sea, but in the land, for people, dominions, gold, and silver, he far exceeds the power of the great Turk in treasure and strength."

The traveller also describes how "the king sitteth every day in person to hear the suits of his subjects," he sitting "up aloft in a great hall on a tribunal seat, with his Barons round about ;" while on the ground "forty paces distant" are the petitioners "with their supplications in their hands, which are made of long leaves of a tree," and a present or gift according to the weightiness of their matter." If the order be favourable, "he commandeth to take the presents out of their hands ; but if he think their demand be not just or according to right, he commandeth them away, without taking of their gifts or presents." So the pitiless Bureng Náung had a conscience, when sitting as a king to hear his people's complaints.

The Taláing history records that the emperor desired another expedition to Leng-dzeng, to retrieve the last disaster there, and "destroy the head and not the mere tail of the cobra." The levy of an army was commenced, but the people murmured loudly, and many were heard to say that it was better to die at home than to perish of hunger and fatigue in a far country. The Shans were equally discontented, and some of the Tsaubwás, it is said, were supported in their opposition by the emperor's half brother and son-in-law, the king of Ava. The project was deferred for the present, but in 1574, the emperor determined to place Ubarít on the throne of Leng-dzeng. He marched in October of that year, and arriving at Máing-zán, laid in stores of grain. He did not march into the country, but issued a proclamation that he had come to place the rightful heir upon the throne. He then bestowed, the regalia upon Ubarít with much good advice, and departed, leaving his tributary at Máing-zán with some troops. He reached Hantá-wati in May, 1575. But a new expedition against Mogáung and Monyin had now become necessary ; for those restive states had refused to join the last expedition to Leng-dzeng, and were in open revolt. A force directed by the emperor himself proceeded north from Ava. The Tsaubwá of Monyin was killed, but the other fled, and though the troops followed him into regions where there was only snow for water, they could not capture him. In Leng-dzeng, however, the course of events was more fortunate. The usurper was delivered up by his own officers, together with his son, and the



Burmese commanders, apparently glad to leave, returned at once with their prisoners to Zimmé. There a portion of the force remained, and the remainder came on to Hantháwati. These important prisoners were forwarded to the emperor who was still at Mogáung, as the exhibition of them in that quarter would, it was considered, have a good effect. The Tsaubwá of Mogáung, however, could not be caught, and the emperor, recalling his son and other officers from the pursuit, returned to Pegu, and reached his capital in July, 1576.

There a great triumph awaited him. The emperor had long been in communication with ports on the coast of India and with a Buddhist king in Ceylon. He was the most powerful protector of the three treasures in Indo-China, and his support was naturally sought for by the now petty rulers in the holy island of Buddhism. Two years before, a Singalese princess had arrived and had been received with high honour, though the Portuguese historian asserts that the lady sent was only a daughter of the chamberlain of the king of Colombo. Now, at the very time the emperor returned to his capital, news was brought of the arrival of the holy tooth relic of Gautama Budha in a ship at Bassein. As the season was unfavourable for the ship to come to Pegu, a deputation of all the nobles of the highest rank was sent, and they bore a golden vase, adorned with the richest jewels taken from the conquered kings, in which the precious relic was to be deposited. A letter was also received from Dhammápála, the king of Ceylon, announcing that he was the only orthodox king of the four who ruled in the island. Arrangements were made for building a suitable pagoda for the reception of the relic; and with reference to Dhammápála's complaints of his being rather overborne by the three heretical kings, an envoy with a small force selected from all the various races in the emperor's army, was despatched by sea to Ceylon. This, it is intimated, had the effect of causing the Buddhist king to be much respected, and the envoy then returned.

The Portuguese historian places the arrival of the pseudo-princess and the pseudo-relic at the same time, but otherwise his statement appears substantially correct. It is as follows: "Among the treasure lately taken from the king of Jafanatapán, was an idol adored throughout all the coast of Asia, and so highly esteemed by all those princes, particularly the king of Pegu, that he every year sent ambassadors with rich presents to get a print of it." The king of Pegu hearing that the Portuguese Viceroy had this idol—the tooth relic—, offered 300,000 ducats for it. This was refused, and the tooth was beaten to dust in a mortar and burnt at Goa, by order of the Viceroy Don Constantin. "All men," adds de Sousa, "at that time seemed to applaud the act; but not long after, two teeth being set up instead of that one, as shall be related in the government of Don Antony de Noronha, they as much condemned and reviled at it." As to the

Princess, the Portuguese historian relates—"Brama, king of Pegu, being told "by astrologers that he was to marry a daughter of the king of Colombo, sent "to demand her, and he had never a one; but his chamberlain had one the "king esteemed as his own." He agreed also to give the tooth in dowry with the bride. They were received "with the greatest pomp that ever has "yet been heard of. Many galleys were fitted out, but that which was for "the queen, was covered with plates of gold, and rowed by beautiful young "women, richly clad, and brought up to this exercise. The king of Candea "understanding the deceit of this marriage, and envying that great fortune, "acquainted Brama\* therewith, offering him a true daughter and tooth, "and affirming both that of Columbo, and the other of Don Constantin "were counterfeit, and the true one was in his hands." Nothing of this is to be found in the Burmese or in the Talíng history; the relic, though received with much pomp, disappears from history, and from the memories of the Buddhist nations, where, if believed in, it would have been enshrined for ever. It was deposited in the relic chamber of a Zedi built to receive it, and in which gold and jewels of such immense value were placed, that the Zedi was probably broken into, and the relic chamber plundered, in the time of the Portuguese adventurer, Philip de Brito, about twenty-five years later.

After the acquisition of this relic and, it is inferred, from its good influence, the Tsaubwá of Mogáung was surrendered by his chiefs to one of the emperor's sons, styled Thá-yá-wati Meng, who had been sent with a detachment into that country. The young chief was brought to Hanthá-wati, and the emperor reproached him with his ingratitude, after the kindness with which he had formerly been treated. His life was spared, but he was exhibited at one of the city gates in fetters for seven days, after which he was released. About one hundred of his followers who had supported him in his gallant resistance, were sold as slaves to Kulá merchants, and being put on boardship were sent beyond sea. The emperor had thus rid himself of his most troublesome enemy, but affairs in Leng-dzeng were not satisfactory. To strengthen his position in that quarter, he now appointed his son, the Thá-yá-wati Meng, who had shown great energy and ability, tributary king of Zimmé. He left for his kingdom in March, 1578, and the emperor enjoined him to remember that he owed allegiance to his elder brother the Upa Rádzá. He received the title of Náurahtá Dzáu. But the emperor, from the anxious care he took to bind the two brothers together, seems to have foreseen the danger of future struggles among the tributary

\* Brama was the usual Talíng pronunciation of the national name for what we now style Burma, or as now written by the Burmese, Mrammá and Bamá, but originally Brahmá. Burong Náung, as already explained, claimed to represent the ancient Burma race, and is thus correctly designated by the Portuguese historian.

kings of the empire he had founded. It was again necessary to send an army into Leng-dzeng. A pretender had appeared claiming to be the dead king Bya-tsétsít, and Ubarít was unable to meet him in the field. The Upa Rádzá set out in October, 1579, and marched to Máingzán where Ubarít joined him. The expedition was successful, and the crown-prince returned to Pegu in the spring of 1580, bringing some prisoners of importance.

The emperor had now subdued all the enemies with whom he had fought for so many years. Even Leng-dzeng was to a considerable extent subject to his tributary king. Instead, however, of resting or granting his subjects relief, he turned his attention to Arakan. The king of that country, he observed, desired to be independent, contrary to his engagement, and it was necessary to coerce him. A large fleet of vessels and boats of all sizes were collected, in which an army of eighty thousand men was embarked, and the fleet proceeded to a point on the south coast of Arakan, where the men landed and marched to Thán-dwé (Sandoway) in November, 1580. The force was commanded by one of the emperor's sons, who received the title of Thirithu-dham-má Rádzá. He entrenched himself at Thándwé, and awaited further orders as to an advance on the capital of the kingdom. This expedition is noticed by the Portuguese historian, who states that a ship belonging to the king of Pegu was loading at Mazulapatan. The governor sent some ships to seize it, on what account is not stated. They did not encounter it there, but afterwards near the mouth of the river Negraes, and there sunk it. Near this, they met the Prince of Pegu with a fleet of 1,300 sail, designed for the conquest of the kingdom of Arakan. A fight took place, the Portuguese disabled and took some of the enemy, but were obliged to withdraw, on account of the great number opposed to them, and got into the port of Arakan. The Portuguese then considered themselves at war with the emperor of Pegu, which probably resulted from his interference with the petty kings of Ceylon. In the native histories no notice is taken of this attack on the Burmese fleet. The army sent by the emperor seems to have remained inactive at Than-dwé for nearly twelve months. In October 1581, reinforcements were sent, but these did not go by sea. The emperor's days, however, were numbered, and before the whole of the reinforcements reached their destination, he died very suddenly in November, aged sixty-six years, and after a reign of thirty years in Hanthá-wati. There is a studied obscurity in the native histories as to the lineage of Bureng Náung, but as he had in early life married a sister of king Tabeng Shwé hti, it is probable that he belonged to the royal family of Táungu.

## No. 3.

*List of the Kings of Pegu of Shan race, who reigned after the re-establishment of the kingdom under Waré-ru, A. D. 1287.*


| Names or titles of Kings.                 | Commencement of reign. |       |              | Length of reign in years. | Relationship of each succeeding king. | REMARKS.                                                                  |
|-------------------------------------------|------------------------|-------|--------------|---------------------------|---------------------------------------|---------------------------------------------------------------------------|
|                                           | Year of religion.      | A. D. | Burmese era. |                           |                                       |                                                                           |
| 1 Wa-ré-ru, .....                         | ..                     | 1287  | 649          | 19                        | ...                                   | A Shan chief who established the dynasty, but had his capital at Muttama. |
| 2 Khun-láu, or Tha-né-ran-bya-keit, ..... | ..                     | ..    | 668          | 4                         | Brother.                              |                                                                           |
| 3 Dán-án, or Theng-mháing, .....          | ..                     | ..    | 672          | 13                        | Nephew.                               |                                                                           |
| 4 Dzu-dzip, or Binge-ran-da, .....        | ..                     | ..    | 685          | 7                         | Brother.                              |                                                                           |
| 5 Binya-é-láu, .....                      | ..                     | ..    | 692          | 18                        | Cousin.                               | Son of No 2, Khun-láu.                                                    |
| 6 Binya-ú, or Tabeng-phýú-sheng, .....    | ..                     | ..    | 710          | 37                        | Cousin.                               | Son of No. 4, Dzu-dzip. This king restored the ancient capital Pegu.      |
| 7 Binya-nwé or Ré-dá-dí-rít, .....        | ..                     | ..    | 747          | 38                        | Son.                                  |                                                                           |
| 8 Binya Dham-má Ré-dzá, .....             | ..                     | ..    | 785          | 3                         | Son.                                  |                                                                           |
| 9 Binya Rán-kit, .....                    | ..                     | ..    | 788          | 20                        | Brother.                              |                                                                           |
| 10 Binya Warú, .....                      | ..                     | ..    | 808          | 4                         | Nephew.                               |                                                                           |
| 11 Binya Keng, .....                      | ..                     | ..    | 812          | 3                         | Cousin.                               | Reigned seven months.                                                     |
| 12 Mhán-dán, .....                        | ..                     | ..    | 815          | ..                        | Cousin.                               | Daughter of No. 7, Ré-dá-dí-rít.                                          |
| 13 Sheng-tán-bu, Binya-dán (Queen), ..... | ..                     | ..    | 815          | 7                         | ...                                   | Not of royal race.                                                        |
| 14 Dham-má Dzé-di, .....                  | ..                     | ..    | 822          | 31                        | ...                                   | Son-in-law of No. 13, Sheng-tán-bu.                                       |
| 15 Binya Ran, .....                       | ..                     | ..    | 853          | 35                        | Son.                                  | Conquered and deposed by Tabeng Shwé hti, king of Táungu, A. D. 1540.     |
| 16 Ta-ká-wut-bi, .....                    | ..                     | 1526  | 888          | 14                        | Son.                                  |                                                                           |

*Notes on the age of the ruins chiefly situate at Banáras and Jaunpúr.—By the late MR. CHARLES HORNE, B. C. S.*

The following notes refer chiefly to the ruins at Bakharyá Kunḍ at Banáras, full accounts of which have appeared in the Journal of the Asiatic Society of Bengal for 1866, and those at Jaunpúr, viz., the three great mosques of Aṭálah-Lál Darwázah and the Jámi' Masjid; although a large portion of them will apply to many other buildings in this part of India.

Up to the winter of 1870, I had always believed, and my belief had been strengthened by the opinions of others, but these buildings had in general been built upon Buddhist or ancient Hindú substructures, or had been altered and converted from such buildings for Muhammadan purposes. They had been so treated by the Rev. M. A. Sherring and myself, when describing them, and General Cunningham, Archæological Surveyor of India, appeared to be of the same opinion. Thus these substructures would date very early, even to 300 and 500 A. D., at least.

My attention to the subject of this alteration and conversion had been first aroused by Mr. Fergusson's admirable account of such conversion, and most of these buildings shew traces of such alteration. But happening to refer to Mr. Fergusson's History of Architecture, Vol. II, page 663, for a description of Indian Saracenic Architecture, the edition now used by me being of a later date than that I possessed before the meeting in 1857, I find that the writer, speaking of Bakharyá Kunḍ near Banáras, says, that "there is a singular group of tombs and other buildings by the Moslems which are singularly pleasing specimens of the Jaunpúr style."\*

In the upper part of the page, there is a description of the grand old Aṭálah Mosque (  ) at Jaunpúr, in which Mr. Fergusson says that he was "almost inclined to agree with Baron Hügel in considering this a Buddhist monastery." I have lived five or six years in the immediate vicinity of all these buildings, and have examined them most carefully and duly weighed all the evidences of antiquity I met with, and I entirely agree with Baron Hügel in holding that much of the substructure as well as the general plan is Buddhist or Ancient Hindú. If so, they are most interesting examples of their class and built examples of an ancient style which Mr. Fergusson holds not to exist in India at the present time. Hence the subject assumes great interest, and is worthy of careful and temperate discussion. Unfortunately, to be properly dealt with, it requires many plates.

In two manuscript copies of the Jaunpurnámah, or 'History of Jaunpúr,' which I have compared, and which was compiled some seventy years

\* In a footnote to the same page we find :—Journal of the Asiatic Society of Bengal, for 1865 (should be 1866). *There however, they are mistaken for Buddhist remains, which they are not.*"

since by Khairuddín Iláhabádí, a most learned Muslim of the city, from manuscripts and from local oral tradition, the Aṭálah Masjíd is spoken as an existing idol temple when Fírúz Sháh founded the city. In this record we are told that Rájah Jay Chand overcame the giant Karabir, who resided at Jaunpúr, and destroyed an idol temple; but this temple would seem rather to have stood on, or below, the site of the Fort of Jaunpúr, and of it but few traces remain. These consist of carved stones built into the mosque, which was afterwards constructed chiefly thereof in the Fort area.

This view is supported by the fact that, in 1858-59, when mines were drawn under the fort for the purpose of destroying the fortification, carved stones and fragments of friezes were dug out, of the same patterns as those used by the Muslims in their erection of the propylus of the mosque of Aṭálah. This fort dates (as a fort) with the bridge, or perhaps a little earlier, *i. e.* the latter part of the 15th century. The temple of Aṭálah Deví, or Dewal Aṭálah, is spoken of throughout the history as having been a place of great sanctity, and it would seem that the Bráhmans on the overthrow of Buddhism had appropriated it, and making Sákhyá Muni the ninth Incarnation of Vishnu, left his figures standing therein. The fact of there being such figures, many remains of which still exist, only proves that the monastery was built after the faith had become much degenerated. Fírúz Sháh granted the people a *sanad* whereby their temples were not touched, but no new temples were to be erected. Subsequently, we are told, that *naturally*, as the Muslims gained power, they converted it into a mosque, and it became the state place of prayer; but subsequently falling into disrepair, it was never restored.

This, remember, was written by Muhammadans who could have no possible object in misrepresentation, and who, if it were so, would certainly claim the mosque as an original erection.

When most carefully examined by me, I found no traces of statues of any other than Buddhist, *i. e.* Sákhyá, at the Aṭálah, although some others were found built into the other mosque. In the basement niches there would appear to have been cut in relief bells supported by chains or twisted rope. This is a well known form of ancient Hindú ornamentation, and the cloisters at the Quṭb near Dihlí, which Cunningham so clearly shows to have been constructed of Hindú temple pillars, are covered with them. Report for 1862-63, page xxxix.

This last named writer in one place speaks of the apparent conversion of these bells most ingeniously into seal and stands with a Muhammadan inscription upon them, and this would appear to have been done at the Aṭálah, notably in the vestry room, converted by them into a room for their women who entered by a private door and staircase, and they then appear to have cut upon the said seals their profession of faith.

Again, the brackets within the courtyard which supported the eaves of the upper cloister have originally been animals. Their forms have been defaced, but it cannot be concealed, and surely no Muslim ever put these up. Throughout the three mosques at Jaunpúr there are built into the restored or altered parts, such as the gateways, and domes, very many defaced Hindú figures, chiefly Buddhist, built face inwards into the masonry, all shewing most plainly whence the materials were obtained.

The Maháwanso tells us that the pulpit in Buddhistical Viháras always faced the East, and that the principal door faced the East also. Hence the direction of Makkah was already arranged for.

The great porch of the Jaunpúr mosques may be entirely of Muhammadan construction; but the principle of the arrangement of the doorway is very ancient Hindú, whereby the light enters from over the high door and falls at a certain hour on the figure of Sákhyá, which was always placed upon a 'singhásan,' or throne, facing due East.

The cloisters around appear to be much as they ever were, excepting that they have been constantly repaired, and pillars here and there replaced. I have never heard of such pillars being claimed by Musalmáns; and we find the same at the rock cave temple in Bihár, whilst the cruciform capitals are as ancient as any form of Indian architecture that I know of.

The centre gateways are manifestly inserted, and although ancient materials have been used, the work is Muslim. Here any unprejudiced person can see at a glance how the ancient work has been overlapped and built in. He has only to look at the columns and at the ground basement moulding running under the very steps. This basement moulding appeared to Mr. Sherring and myself to be part of the original building, and here I may remark that the Muhammadans, when preparing a mosque, never cared to disturb the good old foundations or the basement moulding. They built on whatever they found that suited their purpose, and hence we find mere ancient substructures.

In General Cunningham's Report for 1862-63, para. 261, p. 23, he says, speaking of remains at Kanauj—"On comparing, therefore, this cloistered Masjid (the Sita-kā-Rasui) with those of Jaunpúr, *which are acknowledged rearrangements of Hindú materials*, we see at once that.....are not Muhammadan. *Vide* also para. 264, which applies still closer to Jaunpúr.

As doubtless the masons employed by the Muslims were Hindús, any mason marks made by them during the rearrangements would prove nothing. They are not therefore quoted in this place. Some were published by me in the 'Builder,' of June 26th, 1869.

The cloister pillars also shew beneath the new work of the porch, which is scaling off and falling down.

The whole country in this neighbourhood was formerly covered with ancient temples, and we found in the foundation under the front gateway

of the Lál Darwázah a Hindú pillar carved over with chains and bells. The fact that Jaunpúr, under some other name, is not mentioned by the Chinese travellers is not surprising; for, as I said before, the whole country is covered with the remains of such buildings, and they had enough to see and describe without going out of their way.

Before leaving these interesting buildings, I would wish to remark a curious coincidence. The "Sita-ka-Rasui" at Kanaúj is quoted by Mr. Fergusson from Cunningham's Report as having been *rearranged* from a Jain temple by the very Ibráhím Sháh of Jaunpúr in 1406, A. D., *i. e.* just the same time as that assigned by that gentleman (*viz.*, A. D. 1419) for the *erection* of the Jaunpúr mosque by Ibráhím Sháh. The inference is very clear. He says that they were commenced at this time, and finished by Husain, 1451-78.

In all this, I do not deny that the Muslims may have copied ancient patterns in carving, as is notably seen in old cloisters in the Fort at Rajghát, Banáras, the adaptation of which has never been disputed, and they certainly used carved stones found on or near the spot for their new work. Mr. Fergusson writes to me that our difference of opinion is not one of degree, it is absolute; "I deny in toto that these mosques are built on Buddhist sites, or that their details are Buddhist, or even copied from Buddhist buildings."

The closed cells under the courts are not wanting, and are visible in a marked degree under the Mosque of Aurungzeb in the centre of Banáras, where all may see them.

The very many ancient carved stones found within the precincts of the mosques prove that at the best they were sites of buildings of great antiquity.

I will now say a little relative to the ruins of Bakharyá Kund and the grounds upon which we (Mr. Shering and I) assigned them the date we did, *viz.*, that of the Gupta dynasty, according to Mr. Fergusson, 300 to 400 B. C.

At Jaunpúr, I am not aware of any inscriptions having been found to fix the conversion of the mosques; but at Bakharyá Kund we were more fortunate, and the reader will find one of the time of Firúz Sháh, A. D. 1375, quoted by Mr. E. Thomas in his work on the Chronicles of the Pathan kings of Delhi, to shew how they *appropriated* and built upon temples which came to their hand. In fact, I may in passing remark, that I have only found one temple at Banáras which can claim date before the time of Mahmúd, the destroyer of temples. It is at Khundúa on the Pach-kosi road, and is well worthy of the visit of any passing archæologist.

The Chinese traveller of the 7th century, Hwen Tshang, mentions many Buddhist monasteries at Banáras in his day, and states that there were thirty, to most of which were probably attached temples, and considering the massive structure of the day, I hold that some remains must exist even now. Hence Mr. Sherring and I examined well the line of country where they were



likely to be, and we reported our success in the pages of this Journal. Chief amongst these was the one at Bakharyá Kund, which Mr. Sherring brought to notice some years ago. Here we found a small mosque, the substructure of which we hold to be original ancient Hindú or Buddhist work. There were also many terraces, girt at their base with massive mouldings, breast works built up of large cut stones, low cloisters constructed of old square columns, and foundations built of huge brick and very many feet in thickness (10 to 30 ft.). Over the ground were scattered carved stones, broken statues, kulsis or top stones, 9 feet in diameter, with many other remains. Below these basement mouldings or blocks of stones, squared on three sides and rough internally, which had been laid bare by the weather, were many incised inscriptions in the Gupta character. A few of these have been collected on the accompanying plate, and these have principally, but not wholly, been copied from stones 'in situ.' This is one of the principal grounds of our opinion, which was not hastily formed. The inscriptions were kindly translated for me by my learned friend Bábu Rájendralála Mitra.

The small mosque is a very curious one of conversion, if it be one. The ground plan is not that of a mosque at all, but of an Indian temple. It is a square with a square projected on each face. On that facing the East, however, the projection has not been carried out, but instead an enormous stone has been let in as a base for the singhásan on which was to stand the figure of Sákhyá. From the base arise pillars, severe in character, square as all the ancient Hindú pillars were in this part of the country, whilst above the Muslims have put on a dome. It has been figured in our account in the J. A. S. for 1866, and even struck J. Prinsep who lithographed it in his views of Banáras. The massiveness of the pillars, which are built up of single stones without mortar, has ensured permanence.

Other remains near are held by us to be of equal antiquity. These have been preserved by being used as tombs for the burial of great men or of saints. With the wealth of material lying about, the Muslims of Banáras appear seldom to have built a tomb, but at Jaunpúr there are most elegant mausoleums in which little or no Hindú materials have been employed.

The strange way in which pillars have been used as architraves at Bakharyá Kund is very singular, but the height of absurdity was at Sayyidpúr Bhitari, a great Buddhist site, where I saw a linga put up for a Muhammadan head stone at a grave, with a little niche for the lamp cut in it, and this linga had been carved out of a Buddhist column. After this, one can wonder at no amount of conversion or alteration by the Muslims.

I trust that in the above notes I have shewn some ground for the views I hold in regard to the buildings, the date of which is under discussion, and I would beg to refer the reader to the ample details in this Journal for 1868.

A few of the incised writings on stones at <sup>Appandoll</sup>  
Bahariya Khund, Benares, chiefly in *suku*

|      |                        |                                                                                               |       |
|------|------------------------|-----------------------------------------------------------------------------------------------|-------|
| 𑀘𑀓   | Cha ma                 | Initial of names in the Gupta character                                                       |       |
| 𑀕𑀓𑀭𑀮 | Ka ra i lla            | Gupta type                                                                                    |       |
| 𑀕𑀓𑀭𑀮 | Pa ma ta               | name in Gupta                                                                                 |       |
| 𑀕𑀓𑀭𑀮 | Ga' x 'Pa'             | name in Gupta                                                                                 |       |
| 𑀕𑀓𑀭𑀮 | Ma pha' -              | ?                                                                                             |       |
| 𑀕𑀓   | ka nka for Sanku       | a hole or a column<br>a stake or a lathe pin                                                  | Gupta |
| 𑀕𑀓𑀭𑀮 | ?                      | Gupta                                                                                         |       |
| 𑀕𑀓𑀭𑀮 | Ku la na?              | If the last syllable be ra the word would<br>ra? mean just to which the charming pot is fixed | Gupta |
| 𑀕𑀓   | Vi ja                  | Base of column                                                                                | Gupta |
| 𑀕𑀓   | Il ja                  | a straight bar                                                                                | do    |
| 𑀕𑀓𑀭𑀮 | Ma ri da lla           | Name                                                                                          | do    |
| 𑀕𑀓   | Ba la for Balla        | a Name<br>meaning spirally fluted                                                             | do    |
| 𑀕𑀓𑀭𑀮 | Va dha ma              | a Name                                                                                        | do    |
| 𑀕𑀓𑀭𑀮 | Ma ka ra ma dha        | In the middle of                                                                              | do    |
| 𑀕𑀓𑀭𑀮 | Ka oo na               | K of the left                                                                                 | do    |
| 𑀕𑀓𑀭𑀮 | Va ri ha               | for Vahi outer range?<br>or Karaka of the long enclosure?                                     | do    |
| 𑀕𑀓   | Ma bi                  | Men or Menety                                                                                 | do    |
| 𑀕𑀓   | Ki cha'                | Middle (now stones)                                                                           | do    |
| 𑀕𑀓𑀭𑀮 | Iha mma'               | a pillar                                                                                      | do    |
| 𑀕𑀓𑀭𑀮 | Ja' hu thu             | Name                                                                                          | do    |
| 𑀕𑀓𑀭𑀮 | U ja ra                | Of the upper course                                                                           | do    |
| 𑀕𑀓𑀭𑀮 | Ma' ra da<br>Ha' ra da | Piece marked so                                                                               | do    |



*Studies in the Grammar of Chand Bardai.*—By JOHN BEAMES, B. C. S., &c.

As the first fasciculus of the text of this ancient poet has now been published, it may be hoped that scholars in various parts of India will begin to co-operate with those few persons who have hitherto had access to the MSS. in elucidating the mysteries of his crabbed and archaic style. The time seems opportune, therefore, for collecting such observations as I have been able to make from time to time on the grammatical peculiarities which Chand's language exhibits. I have not been able to study the whole of the vast work, indeed such a task would take up all the time of more than one student even if he were not like me much occupied with official duties; but as the style, even in its irregularities, seems to be uniform throughout, notes on those books which have been examined, will probably be found applicable to the rest. The illustrations hereinafter given are taken chiefly from the 1st book as it is now in print. The 19th, 64th and 65th books, have also been cited. There are, moreover, several quotations from various parts of the first eighteen books, and one or two from the 21st, the celebrated Mahoba Khand.

By way of getting at a sound working basis, it is necessary first to clear out of the road certain obstructions partly peculiar to Chand and partly shared by him with all early Indian poets. The first of these is the uncertainty of the spelling; in respect of vowels, we find the same word written at one time with a long vowel, at another with a short one; vowels are inserted or omitted at will, and diphthongs are written in two or three different ways. In respect of consonants, arbitrary insertions or omissions occur, double consonants are written as single, and single as double, aspirates are deprived of their aspiration, and unaspirated letters are aspirated at will. The following examples may be taken:

a. Vowels. नारि and नारी; वात, वत, वत्त and वत, आकास and आकाश; बेलि and बेली; रिष, रिषि, रिष्य and रिषी (रिषि); गिर and गिरि; धुष, धूषा, and धूम; दन्तय for दांत or दन्त; सेल, सथल, सरल, सेलह(शैल); जौ, जवं, and जवन; गौरि, गौरी, गउरि, and गवरी; नगर, नयर, नर and नेर; मुजू, मुकौ and मुकौ; मुक्षिथे and मुक्षे; मनुष, मानुष, मानष and मनष; सैति, सैती, सैति and सैत; जै, जय, जइ and जया; विनस्सया and विनास्या; एक, इक, इकह, इकि and इक्क, दो, डुर and दोय.

b. Consonants. पडकर, and पोखर; अग्नी, अग्नि, आगि and आग; भयौ, and भौ; सीष and सीस; कारज and काज also कज्जह; विप्र and विष्य; पेह and गह; अचरिज्ज and अचरज; गुष, गुरय, and गुर; पुन and पुत; कर्म, कम्म, क्रम्म काम; हथ, हत्थ, and हाथ; आह वीवाह; and ग्यान गियाव, and अस्लान, सनान, and नान; मग, मय and मगह; सिव, शिव, and सिभ; सव, सव्व and सभ; गाड गाड, and गड्ड; अदभूत, and अदभूत, and अबधूत; with many others.

Two explanations suggest themselves for this state of things. In the case of alterations which affect the metrical quantity of the syllable, we may suspect that they had been made *metri causā*, as is customary in Hindī poetry; and in those which do not affect the quantity, we can often see various forms of the same word in successive stages of phonetic corruption.

But those two explanations do not account for every change, nor is all yet explained, even if we add the ignorance or carelessness of copyists. Moreover, we are led to be very shy about using the *metri causā* argument from observing the extreme laxity of the poet in this respect. Looking at his metres simply according to the name they bear, we may divide them into three classes:

1st. Those identical with Sanskrit metres.

2nd. Those peculiar to the poet.

3rd. Those identical with modern metres.

Leaving out the second as indeterminable at present, if we take the first and third we find that by no process can we make them scan. We may indulge to the full in the liberty of inserting or omitting the unwritten short *a*, we may pronounce diphthongs as one, two, or three syllables, but not even thus can some of the lines be brought to accord with the scale. Sometimes ten lines will scan quite accurately, and the eleventh be all wrong. The bards of the present day call Chand's style the '*ḍīngal bhākhā*,' as contrasted with '*pingal bhākhā*,' or verse constructed according to strict rules of prosody. It must be remembered that many of these poems were *impromptu* productions, and most, if not all, were written to be sung, and any deficiency of syllables could be covered by prolonging one sound over two or three notes, as often happens in English songs, or on the other hand two or more syllables could be sung to one note as in our chanting. Where so much license exists, we cannot use the metrical argument except with great caution.\*

We are, therefore, driven back to the conclusion that in Chand's time the form of words and their pronunciation was extremely unfixed. This is probable from historical considerations also; and the use of the conclusion itself to us in our present enquiry is that it removes out of the way the necessity of attempting to establish a fixed set of forms for words and inflexions. We take all Chand's words for the present as they stand, we take each word in four or five different forms if need be, and do not trouble ourselves to find out which is the right form for Chand's period, simply because we do not believe there *was* any right form, any one form, that is, more used and more generally accepted than any other. In fact, we

\* Since writing the above, I have been informed by Dr. Hoernle that he does not find Chand's metres so irregular as the bards report, but the learned professor allows himself to alter the spelling of the text to bring the words into agreement with the metres, a practice which seems somewhat premature.

recognize the thoroughly transitional character of the language we have to deal with.

The second obstruction to be removed is that of texts ; so far as I have seen, the MSS. at present available, some five in all, have all been copied from the same original text, and servilely repeat the old mistakes. Where they differ from one another, we can generally detect merely an additional error of the copyist. It is not necessary therefore to enter upon a detailed collation of texts, such a process would not lead to our finding out or establishing one settled and correct reading. Sometimes for thousands of lines together, there is not the divergence of a single letter between the whole five MSS., the same obvious errors being faithfully repeated by all. Historically the Baidla MS. has the best right to be considered the representative of the original text. 'Tod's and Caulfields' MSS. belonging to the Royal Asiatic Society, were made for the officers whose names they bear in the second decade of the present century, as stated in the colophon to each, though it is not stated from what older MS. they were copied. The Bodleian has no colophon, but agrees, as far as I was able to compare it, with Tod's. The Agra which is the worst, and most carelessly written of all, is also from the same origin, with a great many extra blunders of its own. I do not know from what source the translations lately printed in the 'Indian Antiquary' are derived, but from the absence of proper arrangement and the scanty nature of many of the extracts, it is probable that the MS. was not a perfect one. As to the many imperfect scraps which may be found here and there in the libraries of native princes, they are so fragmentary and so interspersed with matter which Chand never wrote, and their language has often been so obviously modernized, that it will be wiser to disregard them altogether, classing them under the head of "pseudo-Chand fragments," and sticking to the few complete copies which are accessible. For working purposes, Dr. Hoernle and myself are taking Tod's as our basis, occasionally assisted by the Baidla and Agra. Caulfield's and the Bodleian being locked up in English libraries cannot be used.

Taking then the work as it stands, and not troubling ourselves in our present initiatory stage with either spelling or text, the following notes may be found useful to start with, though many of them may have to be modified as we learn more about our subject. For it must be steadily borne in mind that we are only at the beginning of the battle, and have no predecessors in the field, of whose labours we can avail ourselves. Everything hereinafter stated, is therefore tentative, and, *pro hac vice* only, dogmatizing would be premature. Moreover, Chand is the earliest poet in the language, and we can therefore illustrate him only by his successors ; his relations to those who went before him are absolutely indeterminable for the present, and will probably long remain obscure.

The pronoun as the oldest and most characteristic part of the language may be taken first. The forms observable approach very closely to those in use in all the Hindī poets down to a late date, the pronoun being peculiarly tenacious of its ancient forms.

Both in the noun and pronoun, the synthetical process has been to a great extent rejected, while the analytical is as yet in an imperfect state of development. Thus, three states or forms of the singular, and three of the plural, may be detected in the pronoun: first, the direct or simple form, used for the nominative: second, the oblique, used for all cases, sometimes with the addition of post-positions as *कौं, चौं, ते, मझ*, etc., but more often without any distinguishing mark: thirdly, a special form for the genitive.

The pronouns of the first, second, and third persons are exactly parallel, the first being modifications of a theme *mo*, the second of *to*, and the third of *tā* (*yā* and *vā*).

It will perhaps be useful in a little known author like Chand to give rather copious illustrations of each form first, and then to tabulate the results at the end.

The commonest form for the nominative of the first person is *चौं*. This is derived from the Skr. *अहम्* by rejection of the *अ* and resolution of the final *m* into its compound elements, as in *गांव = ग्राम* (see my *Comp. Gram.*, Vol. I, p. 254). One example may suffice for this very frequent form.

तौ चौं बण्डा देह ॥

Then I quit the body (*i. e.*, kill myself) I. 157. 2.\*

Differing only by the omission of one of the top strokes and therefore to be regarded more as a variation in writing than as a separate form is *चौं*, as

सो चौं सबे सुनत चौं मात ॥

I am (constantly) hearing all that, O mother. I. 160. 4.

चौं जानि ग्यान दह कहौ तोहि ॥

I knowing science tell this to thee. III. 27. 50.

The form *मैं* often written *मे* and so hardly to be distinguished from the post-position 'in,' occurs in a few passages, as

मे सुन्या साहि बिन खंषि कीन

तजि भोग जोग मैं तप्य लीन ॥

I heard the Shah had deprived (him) of eyes.

Abandoning food I practised austerities and penance. LXV. 110, 17-18

In these lines, and wherever else it occurs, *मैं* is used before the past tense of an active verb, showing that it was still regarded as an instrumental, as it is by origin from the instr. of Sanskr. *सया.*, Prak. *सर* and *सद्*. Chand I believe wrote simply *मैं*, as in Marathi *मो*; the *anunāsikā* is a modern

\* The Roman numeral indicates the Book of Chand's poem, the first Arabic numeral, the canto or poem (*Kavitt*), the second the line. The numbering follows my list in J. A. S. B., Vol. xli, p. 204.

addition, so is the use of **मैं** as a nominative, and the modern fashion of saying **मैं ने** is founded upon ignorance of the true nature of the word and contains the instrumental twice over.

For **मोहि**, commonest of the oblique forms, innumerable examples may be found. Two may suffice, as the form is also in use in mediæval Hindi, down to the seventeenth century at least.

**कह्यो मोहिनि वर मोहि ॥ I, 192. 2.**

The lord of Mohini (Durgâ) hath said to me.

**नही मोहि काम पिता राजधान ॥ LXIV, 366. 9.**

There is no business for me in my father's palace.

(*i. e.*, What have I to do with it ?)

It is apparently Chand's idea of metre, for he has some ideas on the subject, that leads him to shorten this form constantly into **मुहि**, as :

**जो मुहि ढुंढा निगलिहै. I, 170. 2.**

If Dhundha shall swallow me.

**तब लगि कह द्रिद्र तन ॥**

**तब लगि लघु मुहि गात ॥**

**जब लगि हौं आयौ नही ॥ तो पाद न सेवान ॥ I. 276. 1-4.**

Till then pain and poverty (were in my) body.

Till then my limbs were light ; (*i. e.*, mean, contemptible).

As long as I came not (to thee),

And worshipped at thy feet.

The final short *i* is sometimes omitted, as

**मुह सुम्मे इह मत ॥ I. 179. 2.**

This opinion seems (right) to me.

Commoner than any except *mohi* is the form **मो**, used for all cases, sometimes with, but oftener without, post-positions, as

**किम उधार मो होइ ॥ I. 188. 11.**

How shall there be salvation for me.

**जिहि हतौ अप मो तात गर ॥ I. 49. 9.**

He who killed the snake (on) my father's neck.

**भट जाति कविचन नृपति ॥ } VI. 18. 1-2.**

**नाथ नाम मो चन्द ॥**

Bhat by caste, king of poets.

Lord! my name (is) Chand.

**बैसी कहि मो कछ डर पाऊ ॥ I. 160. 1.**

Having thus said for me you find fear.

(*i. e.*, You put fear into mind).

**जो मो सों साच न कहो ॥ I. 157. 1.**

If you do not speak the truth to me.

Instances of the form **मुम्ह** are also frequent.



इह धरनी मुझ पित परपित ॥ I. 279. 1.

This land (was) my father's and my ancestors'.

का किछि बंसहि उपज्या ॥

तू मुझ जंपहि माई ॥ I. 147. 3, 4.

Who (am I), from what race sprung

Tell thou to me, O mother.

Instances of मेरे are as follows :

मेरे कबूई दाय न आवड ॥ I. 160. 2.

You have no pity on me.

(Lit. Of me any pity not comes.)

सत भ्रात मेरे हते ॥

Seven brothers of mine are slain. V. 61. 3.

इह मेरी अरदासि ॥ (i. e. عرضداشت).

This is my petition. I. 228. 2.

For the nominative plural हम is universal ;

हम तुम कबडं नहि विरड ॥

We (and) you had never strife, I. 210. 29.

हम तुम काम इहि पैत आज ॥

We and you (have) business (on) this field to-day. Ib. 31.

The oblique form is हमहि and the genitive हमारो •रे •री.

आहदा तुनो हमारो बानीय ॥

Alhá, hear my word. XXI. 145. 2.

The nom. is used when we must translate by a genitive or other oblique case, as in हम मरण दिवस, the-day of the death of me. I. 210. 27. It is a nom. again in

कहे कह हम मानी सम्बह ॥

Quoth Kanh, honorable (are) we all. VI. 82. 1.

The post-positions are affixed as in the modern language हम सौ, etc.

For the second person the singular nom. तू has been quoted above, as also the plural nom. तुम; the former has an emphatic form as in the hymn to Bhavani—

तुंही गङ्ग गोदावरी गोमतीयं ॥

तुंही नर्बदा जमना सरस्वतीयं ॥

Thou art Gangâ Godâvari, Gomati,

Thou, Narbadâ, Jamunâ, Saraswati. LXV. 16.

And so on through some forty lines. In the following, however, we have the oblique form : the only difference is the absence of the anunâsikâ. The *i* is lengthened metri gratiâ ;

सबै कख अमै ॥ तुही नाम लगै ॥

Before all affairs. Thy name is affixed.

Hymn to Ganesha, I. 26. 26.

उ — | — उ | — — || उ — | — उ | — — ||

Sabai Kajja aggai tuhi náma laggai,

The regular form for the oblique is, as might be expected, **तोहि** ; **तूठ** सम्भू तोहि || I. 192. 4.

Sambhū is pleased with thee (**तूठे** = **तूठ**).

Shortened to **तुहि**, as in **जदि न आप तुहि भयो** || I. 60. 1.

If there were not a curse on thee.

Or to **ते**, as

**सुनिय बात तो तान** || I. 250. 1.

Hearing (this) word, thy father.

Parallel to the first person, occurs **तुम्ह**, **अवन सनाउं तुम्ह** || Let me tell the tale to thee. LXV. 311.

There is also the Prakritic form **तुच्च** in **तुच्च पुत्रच पौत्र बधू उरनं** || Thy sons and grandsons from the wombs of thy wives. I. 280. 3., and **तुच्च भुज बल अचिरज कह** || Say that the strength of thy arm is wonderful. LXV. 325. 3.

The oblique form of the plural is **तुमहि**, and of constant occurrence.

**पुत्र एक जइच तुमहि** ||

I ask one son of thee. I. 88. 3.

**कै सिर तुमहि सम्यिहौ** ||

**कै सिर धरिहौ बन** ||

Either I will yield my head to thee,

Or I will put the umbrella over my head. I. 279. 3, 4.

(i. e., I will conquer thee, or die.)

The post-positions are used with **तुम**, as **तुम कौ**, **तुम सौ**, etc.

For the third person we have a definite personal pronoun **सो**, as well as the two demonstratives **इह** and **उह** = this, that, with their respective formations.

**इह** 'this' is found repeatedly **मोहि इह आगम बुझै** || To me this future appears clear. I. 28. 2.

The oblique form is **याहि**, **याहि सम्यूरन को यिर काजं** || To complete this (is) a work determined on. I. 87. 6.

I am disposed to see a shortened form in the line

**इह य (या) चित मो चित** ||

This was his thought and my thought. I. 251. 4.

Both the nom. plural of **उह** and an emphatic singular of **इह** are contrasted in the following :

**वे बाहै तरवारि || इहै मुष पकरि सु कहै** ||

They ply their swords, He catching (them) in his mouth breaks (them). I. 254. 5, 6.

In order not to prolong this section too far, I will now merely give the

scheme of the pronouns as far as I have found them, or can construct them from analogy. The latter are in brackets.

| 1st Person. |                          | 2nd Person.                    |                 |
|-------------|--------------------------|--------------------------------|-----------------|
| Sing. Nom.  | हैं, हो                  | तू तूहि                        |                 |
| Oblique     | मेहि, मुहि, मो, मुझ, मुह | तोहि, तुहि, तो, तुझ            |                 |
| Genitive    | मे, and मेरौ •री •रे     | तुष, ते, तेरौ •री •रे.         |                 |
| Plur. Nom.  | हम                       | तुम occasionally in Gāthā तुमं |                 |
| Oblique     | हमहि                     | . तुमहि                        |                 |
| Genitive    | हमारौ                    | [तुम्हारौ] तुम्हरे •री         |                 |
| 3rd Person. |                          |                                |                 |
| Sing. Nom.  | सो. he                   | इह this इहै                    | उह that उहै. वह |
| Obl.        | ताहि, ता                 | याहि, या                       | वाहि. वा        |
| Gen.        | ता कौ etc.               | याकौ etc.                      | वाकौ etc.       |
| Pl. Nom.    | ते तेउ                   | ये इहै                         | वे              |
| Obl.        | तिनि, तिनै, तिन          | इनि. इन                        | [उनि] उन.       |
| Gen.        | तिन कौ                   | इन कौ                          | [उनकौ]          |

ताहि is shortened into तिही, and thus corresponds with जिहि (pl. जिनि and जिनै) from जौ.

The interrogative is कौ or को, oblique किहि, pl. किन. Of other forms may be cited कितनौ and its series, also कैसे and its series shortened at times to किसे, जिसे etc. A curious double form occurs in the lines

जाकै देह न होई ॥

ताहि कैयें के गहिऐ ॥

He of whom there is no body,

Him in what way can one catch? I. 161. 8.

I suspect कै here to be a relic of the verb *kar*, as in the same passage occurs the phrase

जिहां दिष्ट नह भिद् ॥

ताहां कैसे करि सुझे ॥

Where the sight does not penetrate

There in what way can one see? *ib.* 4.

It would mean in full 'how having done? in what manner having acted.' The oblique form of the plural is used adverbially for 'how?,' and takes anuswāra as in the first of the two last quoted instances. In the following it stands alone—

सरङ्ग दे कैयें जुध कीनौ ॥ I. 154. 4.

How did Sārang De make war?

For कितना and its series we have also कौनौ and the rest.

कैसे नर रिष रारै ॥

अर सुर दानव जये ॥ I. 162. 3-4.

How many men, and Rājārshis,

Have there been (and) gods and demons of you.

Chand's noun is rather a formless affair, as might have been expected, not only from the age in which he wrote, but from the style common to all those most obscure and difficult of writers, the Hindi poets. Like them, he loves to string together crude nouns, and leaves the reader to construct sentences out of them by mentally supplying the needful case-signs. This he does not merely in his rhapsodies where perhaps no very definite meaning is to be expected, but even in his narrative portions. Thus in the very first stanza

धिर चर जङ्गम जीव चन्दनमय  
(Literally) Firm. Going Living being. Life. Possessing qualities of sandal-wood.

All which may be put together into a sentence as the reader likes; or again—

कल बरनि बरनि सु कन्द.  
Kali (yuga). Heroes. Heroes. Well. Strife.  
नृपराज दुज गल बन्धि  
King. Brahmin. Neck. Bind.

Other instances afford a clue by some verbal form, or by the context; as

सब जन सोच उप्पनो ॥

To all men anxiety arose. I. 149. 2.

for सब जननि कौ;

सेव बड्द्रव उपावन ॥

By service much wealth is gained. I. 262. 8.

which may be rendered in Mod. Hindi thus सेव से बड्द्रव का उपावन होता है.

दरबार ताल बधि भरि वारि ॥

The darbār became like a tank full of blood as water. V. 37. 1.

In full thus—दर्बार ताल जैसा हृष्या बधिर से भरा हृष्या जैसा पानी से.

The case-signs, however, are fully and freely used when the metre allows, and I shall now give instances of their use, exhibiting the more ancient as well as the transitional forms, and those which are identical in form with the modern post-position.

The objective case, including both dative and accusative, is indicated by the preposition, concerning whose origin I reserve my opinion for the present, कऊं.\* Variant forms are कऊं, कौ, कौ, from the last of which by dropping the anuswara comes the modern को.

जचै सु सोई तुम एक कऊं ॥

He seeks one of you. I. 88. 9.

\* Provisionally, Trumpp's theory of the origin of this form from कथं, resulting from कतं by aspiration of the त owing to elision of the ri, may be accepted, but there are difficulties even in this theory. (See his Sindhi Gram. p. 115). Caldwell's connection of this form with the Dravidian ku (kku) must in any case be regarded as finally exploded and no longer tenable.

प्रातः समे वर दुजन कऊं ॥

बंढि खय कर दीन ॥

At morning time the hero to Brahmins

Dividing with his own hand gave (gifts) VII. 5. 3-4.

करि दंडौत सवन कऊं ॥

Having made obeisance to all. VI. 38. 2.

Another instance was quoted a while back under *सो*. The *u* is lengthened *metri gratiâ* in

प्रिथीराज नौदिव युद्ध कऊं ॥ हम परिमाल बुलाद इव ॥

For the war with Prithirāj at Mahobā Parimāl has summoned us, XXI. 84. 6.

The other forms are too common to need quotation.

Under the head of ablative, come several post-positions. *सम* is the older form from which come the forms *सौं*, *सैं* and *से*; thus—

कहै दूत प्रिथिराज सम ॥

Says the messenger to Prithirāj. XIII. 16. 1.

In Mod. Hindi, verbs of speaking take *से*; the original meaning of which is shown by its derivation from *सम* to be 'with,' though in modern times often used in the sense of 'from;' for which latter the proper word is *तैं* or *ने* to be noticed presently. Instances of *सैं* occur frequently, one has been given above, another one of *सम* is *कहै कति सम कंत*, 'says the wife to her husband,' I. 7. 1., where *सम* precedes the noun; as it stands we should understand it to mean 'says the husband to the wife,' there is, however, no doubt from the context that it is Chand's wife who speaks to him, not he to her. The use of the particle before the noun, shews that it had not yet thoroughly sunk into a post-position, but is still used as a conjunction, as in Sanskrit.

*परि* with forms *पर*, *पैं*, and *पै* is used as in ordinary old Hindi.

*तैं*, mostly with abnormal anuswar *तैं*, is I take it from *तौ*, (just as *से* from *सो* or *सैं*) a regular ablative termination in Prakrit, from the Sanskrit adverbial ablative in *तस्य*, as *ग्रामतस्य*, from a village, though it has become severed from the noun and is treated as a post-position. Instances are

ता के कुल तैं खयनौ ॥

From his race sprung. I. 164. 1.

तुम कहै करं जीव तैं बध ॥

Say ye, (and) I make him destroyed from life. I. 178. 21.

(i. e., If you give the order, I will kill him.)

For the locative, we find the many-formed post-position represented in modern times by *तैं*. In its earliest form it is *सथे*, then dropping the *e*, *सथ*,

अमृत सु सत मथ बधि ॥

Immortal dwelling among mortal. I. 3. 8.

इह बोलि बानी दल मध्य आयो ॥

Having spoken this speech, he came amongst the army. XXI. 10. 17.

Next comes the solution of the semivowel into its vowel, giving सधि,

बजार सु तीन परे घर सधि ॥

Thousands three fell on earth. XXI. 7. 59.

Sometimes written सडि, when a long syllable is required,

जोगिनीय गई रागिनी सडि ॥

The witch went among the queens. I. 178. 9.

(रागिनी for राज्ञी like जगियान for जज्ञान and आग्या for आज्ञा)

The natural transition from घ + य into ञ (see my Comp. Grammar, p. 326.) gives the form सणि—

मुखेव परिय सणि विल अथाव ॥

Fell headlong into the bottomless pit. I. 79. 10.

(मुखेव a form of 3 sing. pret. for मुख्यो from मोच and therefore meaning “was set free,” in combination with परना = पडना ‘to fall,’ it means ‘was set free falling,’ i. e., ‘fell unrestrainedly or headlong.’)

Final short vowels are of very little account in Hindi, and are omitted or inserted at will. Thus forms मांझ and सञ्झ, with inorganic anuswāra, and in the former with lengthening of the vowel, occur.

उपवाग मांझ चलि गये आप ॥

They themselves went into the garden. XXI. 5. 6.

(उपवाग a curious combination of उप with غ, after the fashion of उपवन).

को राजन कवन घर सञ्झ ॥

What king, in what land? XXVI. 18. 4.

The metre is Gatha which accounts for the Sanskritisms. Chand always puts an anuswara to the last syllable of his words when writing Gatha, he seems to be under the impression that by so doing, he is making them into Sanskrit! In the next line we get,

परचर उजेन मझ ॥

In wealthy Ujjain.

(परचर = प्रचुर abounding in wealth). I have seen also frequently मझ and सञ्झ, but have lost the references to them in my notes. A lengthened or secondary form सञ्चार is also in use with the more definite meaning of “in the midst of.”

नर नारी लज्या गई ॥

फागुन मास सञ्चार ॥

Men and women cast aside shame

In the midst of the month of Phagun. XXIII. 1. 4.

Alluding to the Holi festival.

लै बरि सहर पछी सञ्चार ॥ (सहर = شهر, and बरि = خبر).

Having received the news she arrived in the midst of the city. I. 178. 4.

अरि भजि गये गिर बन समार

The enemy fled into the hills and forests. I. 206. 38.

A step further brings to the rejection of the organic portion of the aspirated letter, leaving only **ह**, we thus account for the form **महि**, which is extremely common.

कज्जल महि कलूरी ॥

रानी रेहंत नयन शृङ्गारं ॥

Putting musk into lamp black

The queen streaks her eyes for ornament. (Gāthā) I. 20. 1.

(रेहंत from रेखा, line).

दिन सत अषधि अंतर बडत ॥

हरि सु उदरै दिनक महि ॥

A period of seven days is ample time,

Hari can save in a single instant. I. 60. 12.

The post-position is here affixed to the genitive as indicated by **क**, see further on under that case.

भारघंड महि चरत ॥

Grazing in Jhārkhand. I. 61. 3.

It is lengthened to **माही**—

देखति स्वपति बनि नींदा माही ॥

Seeing the king sitting in sleep. I. 191. 4.

लग्यो भीर जबहन पैया घर मांही ॥

The hero Jalhan was smitten and fell on the ground. XXI. 264. 20.

And if I am right in my translation, still further to **मांही**—

पिय रन मांही मरे ॥

नारी सती न होय ॥

(If her) husband die in battle,

The wife does not become a *Sati*. XXI. 175. 1.

Lastly, we have the ordinary modern form **में**, the anuswara of which is, as so often the case in Hindi, a mere inorganic accretion.

पिय हि मरत बिधा रहै । करै पुत्र की आस ॥

वह नारी निहचे करै । बडे नरक में वास ॥

The wife who survives when her husband dies, and hopes for progeny,

That woman certainly makes her abode in the great hell. XXI. 174.

I suspect the whole of this verse to be a modern interpolation. The style and versification are too regular for Chand, and the sentiment is

repeated from the preceding lines which are more rugged and Chandesque

निहचै वेद नरक ताहि भाषै ॥

पिय कौ सरत चिया तन राषै ॥

ने is, however, found in many passages where there is no reason for suspicion.

एक मास में नगर बसायो ॥

In one month he established a city. I. 218. 3.

बली कन्ह कै कंध में बसा नायो ॥

He brought down his sword on the shoulder of strong Kanh.

XXI. 264. 24.

Of the instrumental case indicated by ने as we have it in modern times, I cannot point to any clear instance. When we come to treat of the verb, the construction involving this case will be illustrated.

There remains only the genitive, and this is indicated by the particles कौ, के or कै, and की, as in ordinary Hindi. Sometimes shortened to क as in one instance quoted above. Two passages may be noted in which the older form कैरौ, कैरी, which has been recently brought to light by Dr. Hoernle, seems to be found. The first is that in the nineteenth (now 20th) book, in which I formerly saw a pret. of a verb केरना. This view must now be given up, and the passage translated differently; it is a very obscure passage, however, and I now only give a tentative rendering. It is the rout of Shihábuddín's army by Prithiráj.

दौरै गज खंधं चाडवान करौ ॥

करीयं गिरदन चिहं चक फेरौ ॥

Blind (from flowing of blood) ran the elephant of the Chauhán,  
Making a circle he surrounded on all four sides. XX. 141. 7-8.

The other passage is at the meeting of the armies before Mahobá.

कियौ नद नीमान फौजें सुफेरी ॥

भिदो दिष्टि सैं दिष्टि चाडवान करी ॥XXI. 29. 9-10.

फौजें in Chand and in other bards, though plural in form, is always treated as a feminine singular.

The kettle drum made a noise, the army turned,

The sight of the Chauhan was separated from view.

That is, the two armies lost sight of each other, probably from the dust they raised. It will be observed that कैरा in the first quotation agrees with the masc. गज, and कैरी in the second with the fem. दृष्टि, so that we have so far confirmation of Dr. Hoernle's theory. I have traced forms करा and करी, as well as कर, in the cognate languages. From the vast ocean of Chand fresh examples will probably be fished up, as we get to know more about it; at present I have only these two instances in my note book.



With regard to the modification of the base in nouns nothing noticeable is to be found, except that Chand occasionally uses the nom. or direct form of bases in *ā* before the post-position, as

राज आए डेरा मधि॥

The king came into his tent. I. 193. 2.

Where we should expect डेरे; and again

तिहि बेरां आये कहै । डेरा माहि पनग॥

At that time came somehow into the tent a snake. I. 243. 4.

Instances of this practice may be found in Tulsi Das and later poets, and in the tika to the Bhaktamala, and it is universal in Bengali.

There is a curious word in two or three forms, as usual with Chand's words, about which there is some obscurity. It is ऊँतो or ऊँत and must, it appears to me, be translated "from;" though it looks at times like an imperfect of the verb हो, in which case I take it to be one step in the process by which we get to या, which will be noticed under the verb. I give the examples I have noted. In the first, Bisal De is asking his minister about the shrine of Gokaran which he wishes to visit.

केतीक दूर अजमेर ऊँत ॥

दिन दोय संभ नीकै पड़त ॥

How far (is it) from Ajmer?

In two days easily one arrives. I. 178, 47.

Here, by the bye, is संभ which I wanted a while ago. When Bisal gets to Gokaran he meets a Siddha who asks him where he comes from.

कहत सिध किहि पुर ऊँतो ॥

कोन गेन किहि नाम ॥

इहि तोरय आये ऊँते ॥

कै आगै कोई काम. I. 184.

Saith the Sidha *from* what city,

What family, what name?

Had you come here on pilgrimage,

Or (have you) further on any business?

In the first line ऊँतो must be "from," but in the third line ऊँते is pl. of ऊँतो, = या. In the next passage the doubt is still greater, and the whole passage is a peculiarly crabbed one.

इनि चनुफालय बंद ॥

कल वरनि वरनि दु कंद ॥

नहि नाल पिंगल जोर ॥

हुज ऊँतो हुजनिय मोर ॥ I. 48. 1-4.

Here begins the Hanūphāl metre.

In the Kali (Yug) heroes (had with) heroes strife,

Not together harmony or union,  
Brahmin *was* to Brahmins cruel.

नाह is still used in Panjabi for “with,” भोर is still Marwari भूरा ‘wicked, cruel,’ mod. Hindi बुरा. Now in this passage ऊनो may either be “was,” or we may render it “from,” as “Brahmin *from* Brahmins (was) averse, or cruel.” The meaning would more strictly be ‘towards,’ but in the mod. language से would be quite admissible. On the whole, though, I am in favour of regarding it as a verb in this passage.

In those places where it is clearly a postposition, it may still be derived from the root हो, and be analogous to the Bengali होईতে, ‘from,’ Marathi हून, and comes from the Prakrit ablative plural ऊना.

The plural is formed by अनि, the final द् of which is frequently omitted, and the plural itself is often represented by the singular form. The practice of confounding the two numbers is as old as Chand, and probably, for all we know, older. Plural verbs are used with singular nouns, and feminine verbs with masculine nouns and vice versa, as in the line

तव सकल भइय एकत्र नारि ॥

Then all the women were assembled together. I. 178. 1.

Where नारि is plural in sense, though singular in form, while the verb is singular.

सब सैति कह्यो ॥

All the wives said. *ib.*

Here again सैति is fem. pl. and the verb masc. sing., which arises from the instrumental construction.

कन्या कियो अंदोह ॥

The bride made lamentation. I. 171. 2.

### III.

The verb is modern in form, exhibiting the birth of the analytical system, as yet weak and uncertain, but already indicating the direction of its future development.

The number of forms in use is few, and Chand seems to regard verbs as a superfluity in many instances, omitting them at will, and often substituting for all forms of the verb what I may call the verbal crude form, produced by adding a short *i* to the root. Though this form is strictly speaking that of the conjunctive participle “having done,” and the like, yet there are countless passages in Chand where it will not bear this meaning, but is a present, past, or future, as the context may require. For instance in

अनल आनि मातह मिछो ॥ कहि सब बात सुनार ॥

लोग महाजब संग लै ॥ भूमि बसाई आर ॥ I. 309.

Anal *having come* met (his) mother, *having* told and recited the whole affair,

People and merchants *having* taken with (him), *having* gone colonized the land.

All the forms in *i* as **आनि, कहि, सुनार, जाइ** are true conjunctive participles, and the only finite verb in sense is **बसाई**, and even that is a participle in form agreeing with the fem. noun **भूमि** and postulating the instrumental form of the agent. In modern Hindi we should have **अनल ने भूमि बसाई**. On the other hand, however, we find the form in short **इ** requiring a finite sense in the following :

**सिर मंडि छवर बीघल नरिंद ॥**

Bisal the king arrays the umbrella over his head. I. 166. 1.

If we translate **मंडि** "having arrayed," the sentence will be incomplete as there is no finite verb following. The explanation of this use of the **इ** form is probably that it is a shortening of the **ए** of the 3 pers., and in this place it would stand for **मंडे**. The simple indef. present is the same in all the modern Aryan languages, and in Chand presents no peculiarities.

| Singular. |                  | Plural.     |
|-----------|------------------|-------------|
| 1.        | <b>करौ, करूँ</b> | <b>करै</b>  |
| 2.        | <b>करै</b>       | <b>करौ</b>  |
| 3.        | <b>करे</b>       | <b>करैं</b> |

It is unnecessary to quote examples for the regular verb ; the irregular verbs (to use a rather unscientific term) will be noticed presently.

For the simple past the forms are participial and the same for all three persons on account of the implied or expressed instrumental construction.

| Singular. |                    | Plural.     |
|-----------|--------------------|-------------|
| 1. 2. 3.  | masc. <b>चल्यो</b> | <b>चलै</b>  |
|           | fem. <b>चली</b>    | <b>चलीं</b> |

In the masc. sing. the final **यो** is sometimes separated by a short *a* from the root, according to no rule apparently ; for in I. 170. 12 we find **तहाँ सिंघ बर विनख्यो ॥** 'there a lion destroyed the bridegroom,' while in the very next line it is written **सिंघ विनाख्यो**. As variants of the form in **यो** constantly occur those in **एव • एव**, where the **य** has been softened to the palatal vowel and the vowel **ए** hardened to its semivowel. Thus.

**अध इवि इधि भनेव गाव ॥**

Looking looking down wandered the cow. I. 79. 9.

In the same passage occur **सुखेव**, quoted above, and **जनेव** 'she heard' (root **कर्ष**). Instances of the shorter form are

**फिरि आबइ बुझिब तान ॥**

Again **Alhá** spoke in wrath. XXI. 109. 47.

Also **चडिब, चडिबै**, and many others. The form in **एव** is common in Tulsi Das.

For the future where no very strong idea of futurity is implied, the indefinite present is used, as in *तौ हैँ देह*, 'then I *will* quit the body.' But the ordinary form of the future is derivable directly from the second or periphrastic future of Sanskrit, as in *भवितास्मि*, *भवितासि*, and in the third person postulates a non-classical form *भवितास्ति*, for which in Sanskrit we have only *भविता* without the substantive verb. The forms are—

| Singular.       | Plural.       |
|-----------------|---------------|
| 1. <i>चलिहौ</i> | <i>चलिहैं</i> |
| 2. <i>चलिहै</i> | <i>चलिहै</i>  |
| 3. <i>चलिह</i>  | <i>चलिहैं</i> |

To be referred back to a Sanskrit series, Singular *चलितास्मि*, *चलितासि* [*चलितास्ति*]; Plural *चलितास्मः*, *चलितास्य*, [*चलितासन्ति*], but in all cases with elision of the syllable *ता*, so that we should imagine a form *चलि+अस्मि* *चल्यस्मि*. The terminations rest on the excessive corruption of the feeble verb *अस्*; so that *अस्मि* becomes *अस्मि* and then, by rejection of *अ*, *स्मि*. The resolution of *म* into its component parts, the labial and nasal, so frequently noticed in other instances, gives *हौ*, whence *है*, so that we have three words *हौ*, one from *भवामि*, a second from *अस्मि*, and a third from *अहं*. As a good instance of this verb in a transitional state the Marathi forms may be adduced.

| Singular.               | Plural.                |
|-------------------------|------------------------|
| 1. <i>आहैं (अस्मि)</i>  | <i>आहैं (अस्मः)</i>    |
| 2. <i>आहेस (अस्मि)*</i> | <i>आहैं (अस्म्य)</i>   |
| 3. <i>आहे (अस्मि)</i>   | <i>आहेत (अस्मन्ति)</i> |

In old Hindi also, as for instance in Kabir's *Ramaini*, occur the forms *आहि* 'is' and *आहिं* 'are,' from which we get *है* and *हैं* in mod. Hindi.

It would lead me too far away from my present object, which is merely to illustrate Chand's forms, were I to work out all these processes here. I content myself therefore with merely noticing them, and pass on to give examples. Of the first person we have already had the instances *समधिहैं* 'I will yield,' as it were, from (*समर्पितास्मि* fut. of the causal of *हृ* with *सम*) and *घरिहैं*, 'I will place.' The third person, with which the second is identical in form, was shown in *निगलिहै* 'he shall swallow;' for the first plural

*हम सांवत सब जुझिहैं ॥*

*राज चंदेल न जाय ॥*

We nobles all will fight,

That the kingdom of the Chandel may not perish. XXI.

94. 3-4.

\* We must take the full ancient forms *assi*, *asmah*, *astha*, and *asanti*, instead of the more modern classical Sanskrit forms, as the letters which have been dropped in the latter are phonetically necessary to produce the Marathi, Hindi, and other words.

The infinitive or verbal noun has two forms, the abstract in *ana*, and the functional in *iba*. Of the former one instance out of many is

पुढवातन तिन बंधन बिचारि ॥

Having plotted to stop (or the stopping of) his virility  
I. 178. 1.

[पुढवातन = पुढवात्ता], and with nominal inflexion,

कियो चलन को साज ॥

He made preparation for going. XX. 28. 4.

जंग जुरन आलिस जुम्हार ॥ (जंग = جنگ, आलिस = ظالم)

In joining battle a terrible warrior. XX. 31. 5.

The functional form is of very common use, just as it is still in Gânwâri Hindi, in Bengali, Oriya, and Gujrati.

जा विसंब करि रहे ॥

तो ताहि दनिवे को आवे ॥

If any one made delay,

Then he came to strike him. I. 198. 7.

उठि लरिबे को पाये ॥

Rising up, ran to fight. I. 254. 7.

The construction is strange, but not unknown to modern colloquial Hindi in

गारि मात सिष्ये ॥

पुत्र आनल रह सिष्य ॥

Through learning (it) from his mother Gauri

Her son Anal learnt this. I. 258. 1-2.

In modern Hindi, गौरी मा क सीषने से यह सीषा आनल न.

The imperative exhibits the ordinary forms करइ sing. and करो plural, as

अगनक भट आवे घर आऊ ॥

Bard Jagnak, now go thou home. XX. 77. 1.

Owing to the careless way in which *i* and *u* are mixed up, we have a form in हि—

तिन सु गदह अच्छी कहहि ॥

Say a good word about them. I. 9. 12.

In two quotations above we have seen conversely पावइ and आवइ used as present indicatives, for पावहि and आवहि.

The present participle ends in *at*, as सुनत, देखत, and in Gatha, as well as occasionally in other metres where a long syllable is wanted, in *ant*, as in रेहत, कहंत. The feminine is in short *i*, as दषति, also of course ई, as डरती, करती, etc.

The conjunctive participle in *i* has already been mentioned, its original full form is in *iyai*, from the locative of the part. pret. of Skr. Thus from चलिते we get चलिहै. (See Trumpp, on *Adi Granth.*, J. R. A. S., Vol. V, p.

207. I see nothing in the extracts given by Trumpp in that article to justify his assertion that the language of the Granth is not Hindi, but old Gurmukhi. It is a mistake, though common among Sikhs themselves, to apply the term Gurmukhi to the dialect of the Panjāb, instead of the variety of Devanagari in which it is written, *sed hæc obiter.*)

वशि कियै भूमियां घूनि बय्य ॥

Having subdued the rulers of the land with fire and sword.

I. 206. 26.

This is of course often also written with *e*, as *दुनिये*, whence we get another of Chand's confusions, as this form is also used for the respectful imperative, as in

रह नह ग्यान दुनिये न कान ॥

This destroyed science do not listen to. I. 173. 9.

One of the principal difficulties in Chand lies in his construction; an abrupt and elliptical style is imposed on him by his rules, and he makes it worse by trying to say too much at once. So that we have often to expand four of his words into twelve English, and his transitions are so rapid from one fact to another, that we are often landed quite in the middle of a fresh set of events before we are well quit of the old ones.

The custom of constructing the past tense of transitive verbs with the instrumental of the agent with the post-position *ने*, though identical in character with the Sanskrit construction, as in *तेन ज्ञानं विस्तीर्णं*, is yet apparently in its present shape at least of modern origin. It is an obscure question what this *ने* really is. That it is not derived from the *एन* of the Sanskr. is pretty clear. *नै* the older form, sometimes written *नार्द*, is a dative, and is, I believe, connected with the same root as the Marathi *नार्दी*, Naipali and old Bengali *नानि*, whence also Marathi *ना*, the ordinary sign of the dative. It is difficult to decide exactly what Chand's usage is in this respect. While in some cases the agent is in an oblique form, in others it is in the direct or nominative.

The modern Aryan languages know of three constructions or *prayogas*. 1. The *Karta*, or subjective, in which the verb agrees with its subject. 2. The *Karma*, or objective, in which it agrees with its object. 3. The *Bhāva*, impersonal, in which it agrees with neither. They may be thus illustrated in Latin.

*Karta*—ille urbem condidit.

*Karma*—ab illo urbs condita.

*Bhāva*—ab illo urbi conditum.

These three constructions are seen in their full force in that most complicated of all the languages, Marathi, with its irritating three genders and old-world rubbish of that sort. Hindi is more enlightened and simpler.

It has the subjective construction for all tenses of the intransitive verb, and for all tenses of the transitive also, except the preterite in which it admits the objective construction, as राजा ने बात सुनी, also the impersonal as राजा ने लडकी को देखा. In the former the verb agrees with the object, and in the latter is neuter and impersonal, Hindi having amalgamated the neuter with the masc., the verb has attained to the masc. form, though really neuter.

Applying the above principles to Chand, we are struck in the first instance by the absence of ने with the instrumental sense. For instance—

प्रथिराज सुनि कुञ्जर नें॥

आप बुझाए दित ॥

Hearing it, the prince Prithirāj

Himself invited them kindly. V. 13. 3. .

Here if we are to see in this नें our modern friend, the object not being noted, but being understood as living beings, we should according to rule expect बुझाये, and the sentence would run in ordinary Hindi कुञ्जर ने उन्हीं को बुझाया, in other words, the construction would be the impersonal one, the verb would be singular (masc.), unless it be that the verb is here put in the plural out of respect. This instance, however, seems at present quite exceptional, more usually the agent is in the oblique crude form, and both the objective and impersonal constructions are used; a good example of the former is

तिन रक्षा कीनी सु दुज ॥

He protected the Brāhmans. I. 136. 1.

Where the verb agrees with the object *rakshā*, and the agent is in the crude oblique which may be any case we like to call it; again

जिहि रचे सुरग भू सप्त पाताल ॥

Who arranged heaven, earth, the seven hells. I. 11. 11.

The various nouns agree with the verb रचे in the neuter pl. and the agent is again singular oblique. On the other hand, we have the direct or subjective construction in

दह बार बुझ्यो राज ॥

दुज न दियो उत्तर काज ॥

Ten times the king asked

The Brāhman gave no answer (in the) matter. I. 48. 23-24.

And as a remarkable instance of Chand's indifference to the subject we have in one line (I. 49. 9.) जिहि हत्यो अय 'he who killed the snake,' and the next line जो हत्यो अय, with the direct construction. It is perhaps too early to lay down rules for Chand yet, but it may be hinted that in common with many of his successors in Indian poetry, he generally uses the subjective construction when the agent is a noun, and occasionally the objective or impersonal when the agent is a pronoun, and even in that case he is careless

and quite as likely to use one as the other. As far as I have gone, I have met very few instances of the use of the post-position ने, and several of those seem doubtful.

One example is

बाल्यन प्रथिराज ने ॥  
 निसि सुपनंतर चिह्न ॥  
 लै जुगिनिपुरह ॥  
 तिलक मध्य करि दिन्ह ॥

In his youth to Prithirāj

In a dream at night (came) a sign :

Having taken Juginipur (Delhi)

He put the *tilak* (of sovereignty) on his brow. III. 3. 1-4.

Here it is clearly a dative.

With regard to the irregular verbs, or to speak more correctly, those which still retain traces of the older synthetical organization, the array of forms is rather varied. Some few well-worked verbs differ from their fellows in this respect that, whereas the latter have taken from the Sanskr. or Prakr. only the root, or some one form on which they have built up their modern verb with all its varied tenses, these verbs of the older creation adhere more closely to the Prakrit and take their preterite from its preterite and some of their other forms from those of the corresponding tense in Prakrit. Thus देना makes its past tense दिथै, from दिना, for दत्त; also दीनै from दिषा, and दीथै from दिद्वा, all three Prakr. forms. Of the three the commonest perhaps is दीनै; to which rhyme कीनै from करना, and लीनै from लेना. In one or two passages occurs a form भौनै, which I have rendered "filled," supposing it to be from भरना on the analogy of करना. In the cases of करना and लेना, Chand has also the preterites कीया and किद्वा, लीया, but not लिद्वा, the cause of which will be explained below. The three words दीनै, कीनै, and लीनै are often shorn of their last syllable especially at the end of a line, as

कनक तुला तहां कीन ॥

He performed there the ceremony of *kanaktulā*. VIII. 5. 2.

To which rhymes

बंदि अप कर दीन ॥

Dividing, with his own hand gave. *ib.* 4.

परिमल कुध पर झकुम दोन ॥

Parimal gave the order for war. XXI. 5. 32.

दस कोस जाय मुकाम कीन ॥

विच गाम नगर पुर लूट लीन ॥

Having gone ten *kos* he made a halt,

The villages, towns and cities between he plundered. 208. 9-10.

It is one of Chand's favourite rhymes, and in all these cases the subject of verbs is a nom. masc. sing. Of the full forms, the following are examples :



अनंगपाल पुत्री सुरंग ॥  
 पुत्र इच्छा फल दिशे ॥  
 नालिकेर फल सुफल ॥  
 संत आरंभन किशे ॥

Concerning the translation of this passage there may be some doubt; literally it is easy enough, as the meaning of each individual word is well known, but how to put them together so as to make consecutive sentences is a difficulty; "Anangpal—daughter—beautiful (or, taking *su* as an expletive, 'delight')

Son—wish—fruit—gave.  
 Cocoonut—fruit—good fruit.  
 Spell (mantra)—beginning—made.

It probably means that Anangpal had a daughter whose desire for a son bore fruit (to wit by the birth of Prithirāj), the fruit of the cocoonut is the emblem of marriage, and he or she, commenced some spells, why or wherefore *non liquet*. It is a fair specimen of Chand's enigmatical style.

सुख चाव चंदेल सु कीने ॥  
 यह परिमाल लिखै करि दीने ॥

Good speed the Chandel made,  
 (Saying) "Parimā hath written this" gave it into his hand.  
 XXI. 124. 4.

Of the forms दिद and दोष the following instances have been noted :

वर दीधे डुंढा नरिंद ॥  
 Dhunḍhā the king gave a blessing. I. 305. 1.  
 प्रथिराज ताहि दो देस दिद ॥  
 Prithirāj gave him two provinces. I. 307. 61.

Here the final syllable is cut off to rhyme with प्रसिद्ध in the next line.

पुत्री पुत्र उवाह ॥ दान मान घन दिदिय ॥  
 धाम धाम गावत धमार ॥ मनउ अहि वन मनि लदिय ॥  
 (For) joy (of his) daughter's (having a) son, gifts and honours  
 many he gave,  
 House to house singing songs of joy, like a serpent finding a  
 jewel in the forest (?).

The past tense लदिय arises from the fact that the verb *lena* in Hindi is derived from the Skr. लभनं, through forms लहनं and लहिनं, and the pp. in Skr. is लब्ध, whence H. लदिय. Although in Hindi the number of verbs of this class, those namely which form their present from one part of a Sanskr. verb, and their preterite from another, is so small that they have been classed as irregular, yet in the other cognate languages, notably in Sindhi and Gujarati, the number is very large; for instance Sindhi लभणु to take (H.

लेन) makes its pp. लघे, *i. e.* लब्ध. (See Trumpp's *Sindhi Gr.* p. 272, and my *Comp. Gram.* p. 138.)

I have also noted an instance in which the च under the influence of the adjacent palatal vowel changes into ज (ज्)—

सगरी नाव जाय बंध किञ्जय ॥

आला उदिल उतरन न दिज्जय ॥

Carts and boats he went and stopped.

Alā and Udil he allowed not to alight. XXI. 86. 1-2.

In Modern Hindi, बघ किया and उतर्ने नहि दिया.

Leaving for the present the further discussion of these verbs whose real nature seems not to have hitherto been clearly understood, I now proceed to draw out the manifold variations of the verb 'to be,' whether derived from the root अस् or from भू or (if it be so at all, which I much doubt in Hindi) from स्या.

Illustrations from Chand serve not only for his works, but in many cases also for old Hindi literature in general. Tulsi Das, Sur Das, Kesab Das, Kabir, and others are all writers in virtually the same idiom, though Chand is older and more obscure than most of them, and has occasionally forms which have dropped out of use since his time. It will strike the reader, however, that Chand uses the same word in different stages of development according as it suits his purpose. In the case for instance of मध्य, we have every stage from the pure Sanskrit down to the modern vernacular. In such cases it is generally the modern and later forms which agree with those in use in the general run of Hindi poets. Tulsi Das, though, from his extensive popularity, he is usually taken as the typical poet of mediæval Hindi, is not so really from a linguistic point of view. His language is very rustic, and seems, as Dr. Hoernle has remarked, to contain words and forms taken from all the provinces of Hindustan. Sur Das is much purer and more typical. The forms given below are not then all peculiar to Chand, but many of them he shares with his successors.

The preterite, which for convenience sake I take first, as in a narrative poem like this, it naturally occurs oftener than the other tenses, has three forms.

1st form Sing. m. भयो, Pl. M. मर

f. भई [भई]

भयो is very common, as in भयो ताम तामन राज ॥

Wrath was then the king. I. 48. 26.

रौ भयो रिषि अवधूत ॥

Thus was the wonderful Rishi. ib.

अनंगपाल भयो राज ॥

Anangpal became king. III. 17. 4.

It is contracted to भौ, in सुनि श्रवन राज मन भौ उदेग ॥

Hearing the news the king was perturbed in spirit. I. 172. 4.

मन भौ हस कवन फुनि आदय ॥

Laughter was in her mind, then pity came. III. 10. 4.

Feminine भइ, as in ordinary mediæval Hindi, as

पुष्प कथा औं भइ ॥

How the former story was. III. 15. 2.

Plural masc. भए, as भए-विकल लोग घाइल उताप ॥

The folk were harassed, wounded, and distressed. XXI. 5. 5.

Of भई, the fem. pl., I have no examples. In तब सकल भइय एकच नारि ॥ quoted above, it may perhaps be that a fem. pl. is meant and the anusvara has been omitted by the copyist.

The second form is उतो and उतो, plural उते, of which I have already given instances. It is from this form (Skr. भूत) that I derive था, and not from स्थित. The *u* of उता goes out in Gujarati हतो, हतो, etc., in which language the form यतो, the legitimate descendant of स्थित, stands in its proper place as the preterite of a verb यवु' from स्था, parallel to which is Oriya थिला, preterite of थिवा, side by side with हिला from हवा (भू). From the form हतो, by elision of त and coalition of the vowels (perhaps through a transitional form हौ), comes the ordinary Brijhasha form हो, हो, etc., and by another process the form हतो became हो, *i. e. tho*, for *h'to*. The Hindi appears not to have retained any relics of the verb स्था, as a verb, though it has numerous nominal derivatives of it.

Chand has yet another form of the preterite उअ with short final *a*, not very uncommon in occurrence, as

मति करउ सोच सम संच मानि ॥

ऊअ राज काज बर चाडवान ॥

Grieve not, but heed my spell

Ruling has (ever) been the business of the doughty Chauhan.

III. 27. 26.

Connected with which is the conjunctive participle ऊचै, in

बीबाह ऊचै बर बन गयो ॥

The marriage having taken place, the bridegroom went to the forest. I. 170. 11.

The present tense contains no peculiarities. हौ 'I am' has been quoted, but I may mention that I have not yet come across the modern है "is." It seems to come from अस्ति, which is first split up into अस्तति, then the त is dropped leaving अस्तद् from which by change of स into ह and interpolating a second ह, we get Tulsi Das and Kabir's form अहहि, whence the transition is easy to हर, *i. e.*, है. It does not appear quite certain that all this process had been as yet gone through in Chand's time, the cases where है occurs are

all explainable as futures like करिहै, जुगिहै "he will do," "he will fight," and the like. Thus is formed the future होइहै, contracted into कैहै, just as in the imperative होए 'let there be' becomes कै.

प्रलै होइहै तिन वंसह ॥

Destruction shall be on their race. III. 29. 6.

सब बोलि कह्यो कै सिद्धि सिद्धि ॥

All speaking said, 'May there be success, success.' I. 178. 12.

Another form is होहि,

होहि जदवनि सपुतह ॥

The Jadavani shall be with child. I. 249. 6.

and the simpler form of the imperative is हो

जिन सुनत सुध भव हो तन्ननि ॥ (तन्ननि = तन्विनी)

Which bearing be thy nature purified, O lady. I. 14. 4.

In the substantive verb the vague crude form in short *i* occurs constantly, as a present and as future as well as in its more correct sense of a conjunctive participle. It is one of the commonest words and forms in Chand and more than one illustration must therefore be given.

There can be little doubt as to its future sense in the following;—

दिवस पंच कै अंतरै । होइ सु दिल्ली पति ॥

In five days' time he shall be lord of Delhi. III. 11. 4.

Again a few lines later on

जोगनगर जोतिग कहै । प्रभु सु होइ प्रभु राव ॥

Of Jognagar (Delhi), saith the astrologer,

Shall be lord indeed Prithi Ráo (Prithiráj). ib. 13. 3-4.

And again—तुंहर तेँ चालुवान ॥ अंत होइ तुरकानो ॥

After the Tuar the Chaluván, lastly shall be the Turk. ib. 26. 8.

All these three are prophecies, and there can be no doubt about the future sense, in which case we may regard this form as shortened from the fuller होइहै. Less distinct, and hovering round to a potential present are—

कौं उधार होइ आप बर ॥

How *may* there be release from the curse for the hero. I. 58. 3.

करि सकौं प्रभु तो होइ हास ॥

If I were to boast, then there might be laughter. I. 11. ult.

In the next quotation it must, I think, be regarded as distinct historical present—

कहै चंद गुन बंद पडि ॥

क्रोध उ दंगल मोह ॥

चालुवान चंदेल कुल ॥

कंदल उपजन होइ ॥ XXI. 1. 1-4.

Telleth Chand reciting a virtuous strophe,

That wrath and discord,  
(When twixt) Chahuvān and Chandel tribes  
Strife *is* engendered.

So also in अवन सुनत होइ भंग ॥

The ear hearing it *is* broken. I. 159. 2.

होइ होनहार सीता चरन ॥

The rape of Sītā, (which was) predestined, *takes place.* III.  
27. 34.

In this latter case it may also be a preterite. Finally, as instances of its use in its more legitimate sense of a conjunctive participle,

होइ प्रसन्न सुकदेव कहि ॥

Being pleased saith Sukdev. I. 60. 10.

वैलोक जीति जिन जोर कीन ॥

तेउ गये अंत होइ आउ होन ॥

They who swayed having conquered the three worlds,  
They too have gone at last, being without profit. III. 27.  
53, 54.

(आउ = आय)

Of the present participle there are two forms ऊवंत and होत.

तुम बानो बानी प्रसन्न

हसन ऊवंत निवारि ॥

Thy voice is a pleasing voice, laughing being prevented. I. 12. 4.

(i. e., no one can laugh at you.)

पुत्र होत भई अत्य ॥

The son being born she died. I. 170. 3.

(i. e., she died in giving birth to the son.)

Of the future participle होनहार 'that which is to be,' destiny, an illustration has just been given. Others are—

ते कहु होनहार पहचानिय ॥

Thou knowing somewhat of that which is to be. XXI. 92. 2.

And a few lines further on in a slightly different shape—

होनहार रेसो लषी ॥

कही जु आवह उपाय ॥

Thus is written (as) about to be

The plan which Alhā has said. XXI. 94. 1, 2.

Want of leisure prevents me at present from continuing these studies. I hope at a future time to supplement these remarks on the leading features of Chand's style, by some further suggestions as to some of his more exceptional and unusual forms—many of which are puzzles of the most startling description. Perhaps the notes here given may be of use so far

as they go, and the copious quotations will illustrate many more points than those which they are specially intended for. To those who approach Chand fortified by previous reading of the mediæval Hindi poets, the majority of the forms given above will be already to a great extent familiar, but to those who approach him from the direction of Sanskrit and Prakrit studies, his style will be absolutely unintelligible without some such clue as that, the outlines of which I have sketched in these notes.

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*Further note on coins from Kausambhi.*—By THE HONORABLE  
E. C. BAYLEY, C. S. I., C. S.

Since writing on the two coins sent by Bābu Sivaprasād from Kausambhi,\* I have had the advantage of showing the coins themselves to General Cunningham. He at once expressed his preference for reading the third letter of No. 2, as स *sa*, instead of ज *ja*. He said that he thought he had coins in his cabinet which would throw light on the matter.

He has since found two of which he kindly allows me to make use. One of these is the exact duplicate of coin No. 2, but has only the latter half of the inscription perfect. The other coin is in better preservation; its material is brass, and while it differs slightly in type, has the same legend as No. 2, but the third letter is unmistakably स. The whole of the letters on this coin are of a squarer type than those of my coin, so much so that the first letter might almost be read as ब, "ba," if it were not for the clear shape of the letter on my coin.

The total legend must, however, now be read as—

उह सत मित्र, " *ṭhaḥa sata mita*"

"The friend of the virtuous iconoclast"—

A reading which is a clear improvement on those previously suggested.

Both of General Cunningham's coins have the same reverse, a bull with the svastika over its hindquarters and standing in front of a Buddhist chaitya with Buddhist railing very clear, so that now there can hardly be any doubt of the Buddhist character of the legend. General Cunningham's best coin has the symbol on the left of the obverse somewhat different from my coin, but it is not quite distinct enough for satisfactory recognition. General Cunningham says that one of the coins at least was procured at Batesar, which is on the Jamunā, though at some distance above Kausambhi, from which place it may have possibly come.

\* *Vide* above, page 109.



No. 194  
115.

# JOURNAL

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Part I.—HISTORY, LITERATURE, &c.

No. III.—1873.

*Authorities for the History of the Portuguese in India.—By*

T. W. H. TOLBORT, B. C. S.

The History of the Portuguese in India is a subject of considerable interest, though the attention given to it, of late years, by English orientlists is scant. As a contribution to the subject I submit a list of the authors whose works are most valuable. The list does not profess to be exhaustive, but it will be found to embrace the most important sources of information.

I limit the range of these authorities to the period between 1498, when Vasco da Gama discovered India, and 1663, when the capture of Cochin by the Dutch finally broke the power of the Portuguese, and established the supremacy of others in the East. During that period, the adventures of the Portuguese form a chapter of Universal History. In years subsequent to 1663, the subject, though not devoid of incidents of gallantry and romance, dwindles to one of national rather than universal interest.

As an introduction to the subject must be read Mr. Major's interesting Life of Prince Henry the Navigator. This is founded chiefly on old Portuguese authorities, an account of whom is given in the preface; but Mr. Major's narrative is, to all appearance, so complete and accurate, that we may accept it, coupled with the well written summary by Barros, without consulting other authors.

For our present purpose, research must begin where the main thread of Mr. Major's work ends. Starting then from 1497, we have first—

Gaspar Correa. *Lendas da India*, 4 Vols., 4to. Correa is the oldest historian, and is by many considered the most reliable; but, strange to say, his





history, though written in or about 1561, lay in manuscript till a few years ago, when it was printed by the Lisbon Academy. The publication was commenced in 1858 and concluded in 1864. Correa came to India in or about 1512, and served as Albuquerque's amanuensis. His stay in India was not continuous, but it was at Goa that he ended his days.

His history comprises the period from Vasco da Gama's voyage in 1497 to the Government of Jorge Cabral in 1550. The earlier portion is partly founded on the manuscript (now lost) of Joao Figueira, a priest who accompanied Vasco da Gama. The bulk of the work from 1512 to 1550 has all the advantages of contemporary history by the pen of a truthful and intelligent writer. The work is illustrated with pictures of towns, and portraits of the Viceroy's taken, I believe, from pen and ink sketches by Correa himself. Most of the towns are fairly represented, though without accuracy of detail. For instance Aden, Diu, and Colombo, as they appeared in the sixteenth century, can at once be identified by any one who has seen them as they are now. Correa has been termed the "Polybius" of Portuguese History in India. Selections from his work, comprising the three voyages of Vasco da Gama, have been translated and published in English by the Hon. H. Stanley.

João de Barros, the Livy of Portuguese History. His work, in four Decades, though somewhat later than the histories by Correa and Castanheda was, until the last few years, universally regarded as the standard authority on the subject. The recent publication of Correa's *Lendas* raises the question whether Correa or Barros should be followed where discrepancies exist (and in detail such discrepancies are numerous); upon the whole it seems likely that Barros will always hold his place in the opinion of his own countrymen as well as in that of foreigners as the chief of Portuguese Historians. His style is admired, and he gives an interesting sketch of the Portuguese discoveries prior to Vasco da Gama's voyage, a necessary introduction, which Correa and Castanheda omit. Barros died in 1570. He never visited India, but had special facilities for his study as an official in the India Office at Lisbon.

Diogo de Couto, the continuator of João de Barros. De Couto served in India, and though his portion of the History is not considered equal to that written by Barros, it is the best we have for the latter half of the sixteenth century. The fourth Decade by Barros comes down to the death of Nuno da Cunha in 1539, but as this Decade had not appeared when De Couto commenced his continuation, he began twelve years earlier, bringing the continuation down to 1600. The joint History of De Barros and De Couto consists of twenty-four 8vo. Vols., there being for the reason above stated a duplicate account of the twelve years comprised in the governments of Lopo Vaz de Sampaio and Nuno da Cunha.

**Castanheda.** This historian came to India in 1528, and the eight books of his *History* were published between 1551 and 1561. They bring the narrative of Portuguese conquest down to the first siege of Diu in 1538, covering nearly the same period as De Barros. Castanheda intended to publish ten books, but the last two seem to have been suppressed, because they reflected on some of the *grandees* who had influence at Court. I cannot, however, say for certain that the last two books of Castanheda were never published. My own copy omits them, but from a list kindly given to me by Senhor da Cunha Rivara, Secretary to the Portuguese Government at Goa, it would appear that Castanheda's history is brought down to 1550. Castanheda is said to have travelled all over Portuguese India, with the laudable desire of testing and correcting his history.

**Maffei, Historia Indicarum,** a Latin history, based I believe on Barros. It is in one volume comprising sixteen books. It ends with the death of King John the Third in 1557, and is dedicated to Philip the Second. The author was a Jesuit; and attached to his principal work are four books of *Epistolæ Indicæ*, selected letters from India, a very valuable appendix.

**San Romão,** a Benedictine monk, wrote a *History* of the same period in Spanish. I have not seen this work, but believe it is founded on Maffei and is inferior to the original.

**Faria y Sousa.** His *History* was published in both Portuguese and Spanish. It embraces a more extended period than any of the others, beginning with the early voyages of discovery, and ending in 1640, at the eve of the Revolution which restored Portuguese independence. An English translation from the Spanish was published in 1695, with a dedication to Catharine, Queen Dowager, Charles the Second's widow.

For the sixteenth century, Faria y Sousa is an inferior authority to the earlier writers, but he is the one generally quoted by English authors, because his account is the most complete as well as the most easily read. I am surprised that the Library of the Asiatic Society at Calcutta does not contain a copy of the translation. The copy of the original in the public library at Goa seems to be imperfect. Faria y Sousa gives a list of the books and manuscripts from which he collected his information.

**La fitau,** "*Histoire des Découvertes des Portugais*," in French, 2 Vols. There is a copy in the public library at Pondicherry, but not, I think, in our own library at Calcutta. I have not read this work through, but from a cursory examination, it seems like most French *Histories* to be readable and interesting. Lafitau names the authors he has consulted, and brings his narrative down to the same time as Faria y Sousa.

The above authors are all professed historians, who treat their subject generally. But history is usually more indebted to particular accounts,

memoirs, and personal narratives than to prolonged chronicles which are necessarily themselves compilations. This is especially true of Portuguese History in India. Passing on then to this class of authors we find—

“*The Roteiro*,” the account of Vasco da Gama’s voyage, followed by Mr. Major in his *Life of Prince Henry*. I have not seen this, but it is evidently a work of authority.

The *Commentaries* of the great Albuquerque, compiled by his son from the official despatches sent by Albuquerque to King Manuel. They appeared in 1557.

The *Chronicle of King Manuel* himself by Damiao de Goes, published during the reign of King Sebastian, and dedicated to the Cardinal Prince Henry.

The *History of the Portuguese* during the reign of Emmanuel, by Osorio, Bishop of Sylves, in Latin. This, though based on the *Chronicle of Damiao de Goes*, is superior to it as a literary work. There is an English translation, published in 1752.

Antonio Galvan, a contemporary of the Governor Nuno da Cunha, is said by Faria y Sousa to have written much concerning India and particularly about the Spice Islands, but Faria y Sousa was unable to find any of his works except “the Book he calls of Discoveries, which is only short hints of things.” I presume this is the “*Tratado dos diversos e desvayrados caminhos, &c.*” If any other works by this author are extant, they will be very valuable. Crawford eulogizes the author in the following terms: “Of all the Portuguese names connected with the Indian Archipelago incomparably the greatest, except of Magellan, is that of the virtuous, the pious, the discreet, and heroic Antonio Galvan.” The failure of Faria y Sousa to find his manuscripts is no proof that they do not exist; for the instance of Correa’s great History, to say nothing of numerous other books, shows that in Portugal the most valuable manuscripts may lie hidden for centuries.

I here insert a note by the editors of Correa’s History, which details all the printed works prior to the date of that author.

“The printed Portuguese books regarding the History of India, of which Gaspar Correa might have had knowledge, although he may not have seen them all, still less possessed them, are,—the *Life of D. Joao II.*, by Garcia de Resende; Castanheda’s History; the three first *Decades of Joao de Barros*; the first book of the siege of Diu, by Lopo de Sousa Coutinho; the *Commentaries of Albuquerque*; the *Itinerary of Antonio Tenreiro*; the *Book of Antonio Galvao, Tratado dos diversos e desvayrados caminhos, &c.*; the *Relation of the Embassy of the Patriarch D. Joao Bermudes*; the *Chronicles of the King D. Manuel and of the Prince D. Joao by Damiao de Goes*; the treatise on the affairs of China by Fr. Gaspar da Cruz; the

commentary of the siege of Goa and Chaul, by Antonio de Castilho ; and some other which we have forgotten."

The Life of D. Joao de Castro, by Jacinto Freire de Andrade. This work has passed through several editions and is considered one of the Portuguese classics. The second siege of Diu by the King of Gujarát occurred during the Viceroyalty of D. Joao de Castro, and the defence and relief of the fortress are deservedly regarded by the Portuguese as among the greatest of their achievements. The edition of the "Life" published in 1835 contains valuable notes with selections from Castro's correspondence, among these are letters regarding Persian histories of Alexander the Great, probably the "Sikandarnámah," for which D. Joao de Castro, who was a man of literary as well as military ability, had sent. There is a work by D. Joao de Castro himself, the "Roteiro," giving an account of his voyage up the Red Sea in 1540.

The Chronicle of King John the Third, by Andrade, is another work thought very highly of by the Portuguese themselves.

There must be frequent references to Indian affairs in the Chronicles and Histories of other Portuguese and Spanish Monarchs, but the reigns of Emmanuel and John the Third were the "golden age" of Portuguese rule in India. Those of Sebastian and Philip the Second may be considered the "silver age," and subsequent reigns down to the capture of Cochin "the age of brass."

St. Francis Xavier was a contemporary of Don Joao de Castro ; his life and work are so intimately connected with Portuguese India, that authorities regarding them may well be referred to here. Xavier's own letters are the best source of information regarding him. There is the old Latin edition of Tursellinus, and a modern French one by Léon Pagès. Of professed biographies, the most authentic is that in Portuguese by Luccena, and the most popular that in French by Bohours. Three recent biographies should also be consulted. First that by Venn, written from the Protestant standpoint. Second, a volume of Xavier's life and letters, published last year, 1872, by the Rev. H. J. Coleridge, an English Jesuit. (The second volume has not yet appeared.) Third, a Life of the Saint published at Goa in 1861, by Senhor Felipe Neri Xavier, Director of the National Press. This contains much miscellaneous information regarding Xavier and his tomb.

As Xavier is the Saint of Portuguese India, so is Camoens its Poet. The *Lusiad* is an authority in Portuguese History just as Shakespeare is for our own Plantagenets. National pride and patriotism pervade it, and great events which would be smothered in a mere chronicle of facts are brought by it prominently and picturesquely to view. There are many well known lives of Camoens, and many editions of the *Lusiad* in all European languages. The Portuguese (I believe) regard the edition of the

*Lusiad* by D. José Maria de Souza Botelho with most favour. In English, Adamson's *Life of Camoens*, and Mickle's translation of the *Lusiad* are best known.

There is another Portuguese epic "*Malaca conquistada*," of which Albuquerque is the hero, but this has never attained general celebrity.

The *Chronicle of Luis de Ataíde*, by Antonio Pereira. I have not seen this work, but it is quoted both by Faria y Sousa and by Lafitau. Luis de Ataíde was twice Viceroy of India, in 1567, and again in 1578.

Diogo de Couto, the continuator of Barros, was a voluminous writer, and during his prolonged connection with Indian affairs (from 1556 to 1616) wrote many minor works besides his *History*. Among these are numerous orations to the incoming Viceroys. Also a *Life of D. Paul de Lima*, a celebrated Portuguese Captain, who died about 1589, and an interesting treatise called the "*Soldado Prático*." I have not seen any of these works, but Mr. Stanley in the introduction to his "*Three voyages of Vasco da Gama*" gives an abstract of the "*Soldado Prático*," which is a critique on the numerous defects of the Portuguese administration in India.

The Portuguese Missions to Akbar from 1582 to 1605 constitute one of the most interesting chapters in the *History of Portuguese India*. The account usually quoted is that by M. Manouchi, who was for many years Aurangzeb's physician. I have not seen his *History*, but it appears to have been published as a separate work. According to Hough, who devotes a chapter to these Missions, there are valuable manuscript accounts in the British Museum, some in the original handwriting of the Missionaries. There are also narratives of the Mission in Murray's *Asiatic Discoveries*. There is an Italian account of Akbar and of the Jesuit Mission by Peruschi.

The close of the sixteenth century is remarkable in the annals of Portuguese India for the attempt to reconcile the heretical Syrian Church of Travancor to Rome. The chief authorities for this episode are Gouvea's *Jornada do Arcebispo de Goa*, D. Fr. Aleixo de Meneses as *Terras do Malabar*; Geddes, *History of the Church of Malabar*; La Croze, *Histoire du Christianisme des Indes*; Hough's *Christianity in India*; Lee's *History of the Syrian Church*, in one of the Church Missionary Society's Reports; Howard's *Christians of Saint Thomas*; Day's *Cochin*.

There are several other accounts, but the above contain all that is important. Day's *Cochin* is a valuable work generally, as Cochin was the most important Portuguese settlement in continental India next to Goa, and everything connected with it has some bearing on our subject.

While we are on the ground of ecclesiastical history, the following works may be named as in some way connected with Portuguese India, where formerly the predominance of ecclesiastical influence was so marked.

The "*India Orientalis Christiana*" by Paulinus Bartholomaeus, said to be a work of great merit but very rare.

Francisco Sousa's "*Oriente conquistado a Jesu Christo pelos padres da companhia de Jesus.*" This work was published in the beginning of the eighteenth century. It seems to be regarded by later Portuguese writers as an authority for secular as well as ecclesiastical history, and is, I presume, the work referred to in Cottinean's *Sketch of Goa*, page 21.

Bartoli's *Asia*. This, I believe, is the standard Jesuit authority, but there are numerous other histories of the Jesuits.

*Historia das Inquisicoes*, published at Lisbon in 1821.

*Historia da origem e estabelecimento da Inquisicao em Portugal*, by Hierculano.

I have not seen the above works but the following which also have some bearing on the subject are to be found in the Public Library at Goa—

Tellez, *Chronica da companhia de Jesus*.

Luis de Sousa, *History of the Dominicans*.

Damian Cornejo, *Chronica seraphica*, or *History of the Franciscans*.

Pedro Monteiro, *History of the Inquisition*.

It may be observed that the Goa Library is chiefly composed of books which were taken from various convents when the monastic orders were suppressed. No doubt, it contains many other books of historical interest, which a hurried visit did not give me time to discover.

Faria y Sousa refers to a manuscript ecclesiastical History, called "*The Spiritual Conquest in Asia*," written by F. Paul of the Trinity, a Franciscan, in the year 1630. Probably this has since been printed.

For the seventeenth century printed authorities are rare. Faria y Sousa refers to a manuscript by Antonio Bocarro, apparently a continuation of De Couto, and also to accounts of Nuno Alvarez Botello and the Count de Linhares (1629 to 1635), the former in print, and the latter in manuscript. I suppose, it was the same Antonio Bocarro who wrote the description of the Fortresses of India, extracts from which have been published by Sr. da Cunha Rivara in the "*Tissuary*."

Mr. Stanley gives a summary of a manuscript found by him in the Library of Lisbon, entitled "*History of the Elevation and Decadence of the Portuguese Empire in Asia*," which gives some account of the seventeenth century.

Between 1640, the date at which Faria y Sousa closes his *History* (also the year in which Portugal recovered her independence), and 1663, the year in which Cochin was taken by the Dutch, there seems to be almost a blank so far as printed Portuguese authorities are concerned, but the deficiency is made good by an increased number of Dutch and French writers. The

ecclesiastical history of these few years is carried on by a Carmelite missionary, Vincenzo Maria, in his *Viaggio all' Indie Orientali*.

The expeditions, military and ecclesiastical, to Abyssinia; the rise and fall of Christianity in Japan; the rivalry with the Spaniards and Dutch in the Malay Archipelago; and the wars in Ceylon, may fairly be treated as episodes in the History of Portuguese India.

Regarding Abyssinia, the chief authorities are:

Francisco Alvares, *Terras do Preste Joao*.

Tellez, *Historia de Ethiopia*.

Joao dos Santos, *Ethiopia oriental*.

Geddes, *Church History in Ethiopia*; La Crose, *Christianisme d'Ethiopie*; Ludolf's *Historia Æthiopica*.

Regarding Japan,—Kämpfer's well known book is generally accepted as the best authority.

There is a work in Spanish "*Christiandad del Japon*," by Sicardo, of which there are copies in the public library at Goa. There are also collections of "*Epistolæ Japonicæ*," as of "*Epistolæ Indicæ*." The Rev. H. J. Coleridge states that M. Léon Pagès is about to publish a work on the subject.

The Chinese mission, though organised from Macao, was not so connected with politics as the Japan mission, and the early missionaries were mostly Italians not Portuguese. There is a description of China by Faria y Sousa, founded on the Memoirs of Samedo, and there is a separate account of the commencement of the mission under Ricci. There is also the great work of Du Halde.

Regarding the Malay Archipelago, most English accounts of the islands give a sketch of the early Portuguese rule. Crawford's works, and St. John's *Indian Archipelago* may be cited as the most useful. Raffles' *Java* scarcely refers to the Portuguese, but his *Life and Journal* gives a native account of the arrival of the Portuguese at Malacca. I have not yet had an opportunity of referring to Marsden's *Sumatra*. Faria y Sousa, besides his reference to Antonio Galvan, mentions Bartholomew de Argensola as an authority, though an unsafe one, for the History of the Spice Islands. I have a French translation of Argensola entitled "*Conquête des Isles Moluques par les Espagnols, par les Portugais, et par les Hollandais*." The third volume containing the conquest by the Dutch is a continuation of the original work. There is also an English translation of Argensola. There is another account of the Moluccas, by Gabriel Rebello, in the sixth volume of the "*Noticias para a Historia e Geografia das nacoes ultramarinas*."

Regarding Ceylon, our information may be considered abundant and satisfactory. Sir Emerson Tennent devotes the first two chapters of his second volume to the Portuguese and Dutch rule, and refers to two Portu-

guese authorities who treat specially of Ceylon,—Ribeiro, and Rodrigues de Saa. The latter wrote an account of the expedition of 1630, in which his father was killed. There is also a Portuguese account of the siege of Colombo, translated and attached to Baldæus' narrative in Churchill's voyages. Baldæus himself, a Dutch writer, is the best authority for the final struggle between the Dutch and Portuguese, giving a sketch of the negotiations and military movements, with details of the sieges of Colombo and Cochin and engravings of the different forts and towns. Ribeiro's History is contained in the fifth volume of the "*Noticias para a Historia e Geografia das nacoes ultramarinas.*" There is a French translation by LeGrand and an English translation, now rare, by Lee. Sir Emerson Tennent mentions Johann Jacob Saars, as giving in German an account of the campaign in which Colombo was captured. Wouter Schouten's "*Oostindische Voyagie*" is another narrative of the same period.

The above list does not include many "Travels," although the most vivid and faithful pictures of Portuguese India in the 16th and 17th centuries are to be found in the narratives of European travellers. The number of these is so great, that we can only specify a few, referring enquirers to the standard collections of voyages for further details. These collections are well known,—Ramusio, Purchas, Hakluyt, De Bry, Le Brun, Hulsius, *Recueil des Voyages de la Compagnie des Indes Orientales des Pays-bas*, La Harpe, Dampier, Harris, Pinkerton, Thevenot, Churchill, Astley, Lockman, Kerr, Murray, and others. There are two or three Italian collections of value besides Ramusio, and there are some Indian voyages in the Portuguese "*Noticias.*"

Among individual Travels the most noteworthy, either for their intrinsic value, or for their bearing on our present subject, are—

Odoardo Barbosa. The earliest description of India after Portuguese discovery.

The voyage of Magellan, which first took the Spaniards to the East.

The voyage of Sir Francis Drake, the first appearance of the "Heretics" in those seas.

The "*Peregrinações*" of Mendez Pinto.

Linschoten's *Itinerarium*.

Travels of Pyrard de Laval (1601 to 1611). The original is in French, but there is a Portuguese translation, published at Goa by Senhor Rivara. Pyrard de Laval's book is of special value as he resided at Goa when the prosperity of that city was at its height; for although the glory of Portuguese India had begun to diminish some years earlier, the splendour of Goa as a city, was greatest during the first few years of the seventeenth century. Pyrard's description is detailed and interesting.

Dellon's narrative of the Inquisition of Goa. The original was pub-



lished in French in 1687, but there is a Portuguese translation, published at Goa in 1866 under the auspices of Sr. Rivara. This translation contains some valuable notes, and adds as an appendix the account of the Inquisition given by Dr. Claudius Buchanan in 1808 in the *Christian Researches*.

A narrative of the expedition against Ormus, when the Persians and English united to expel the Portuguese in 1622. This is contained in the collections by Purchas and Kerr.

Baldaeus, the Dutch historian of the final struggle between Hollanders and Portuguese. The translation of his *Travels* is in Churchill's Collection.

Tavernier gives a description of Goa, a narrative of the persecution in Japan, a sketch of Dutch history in the East, and an account of the capture of Cochin. Altogether, Tavernier is a very valuable writer for our present purpose, as his information refers precisely to the period when Portuguese supremacy in India was disappearing.

There are numerous travellers a little later than Tavernier, whose narratives contain frequent references to the Portuguese. Among these may be named Bernier, Nieuhoff, Carreri, Fryer, and Hamilton.

Lastly, there is a modern account of Goa, written in English by the Rev. Cotteneau de Kloguen and published at Madras in 1831. This contains a complete historical sketch of Goa from 1509 down to 1812, and gives a description of all the churches, convents, and other public buildings, accompanied by a map. It is, in fact, a modern guide to Goa. There is a Portuguese translation, which I have not seen. \* Probably the notes of the translation are of value, as it was published in Goa itself at a comparatively recent date (1858).

There is another modern account of the Portuguese possessions in Asia, by Gonçalo de Magalhães Teixeira Pinto, also published at Goa with notes by Sr. Rivara. It is a mere pamphlet, but it contains some official documents regarding the transfer of Bombay to the English.

As the Dutch were for sixty years the rivals of the Portuguese in Asia, it is reasonable to suppose that voluminous information may be collected from Dutch authorities. Besides the early Dutch voyages, and the travels of Baldaeus already referred to, there is the great work of Valentyn, '*Oud en Nieuw Oost Indien.*' Tennent refers frequently to this work. There is one copy in our own library at Calcutta, and there is another, wanting the first volume, at Madras. No doubt, a student acquainted with Dutch would find the works of numerous other authors at Batavia and Amsterdam.

It remains to notice official records and periodicals. I believe there are now few records of value at Goa. All that survived have been transferred to Lisbon, and are to be found there in the Torre do Tombo and other collections of Archives. But a very valuable work has been published at Goa

by Sr. da Cunha Rivara from the records of the 16th century. This work the "Arquivo Portuguez oriental" is in five fasciculi, comprising altogether eight volumes. Of these, fasciculus No. 1 is out of print, the remaining seven volumes may be obtained from the Imprensa Nacional at Goa. The contents of the eight vols. are as follows :

Fasciculus 1, letters from the Kings of Portugal to the City of Goa.

Do. 2. Book of the privileges of the City of Goa.

Do. 3 (2 parts or vols). Letters and instructions from the Kings of Portugal to the Viceroy and Governors of India, and also charters and ordinances of the Kings and Viceroy.

Do. 4. The Ecclesiastical Councils held at Goa and the Synod of Diampar.

Do. 5. (3 parts). Various documents of the 16th century. Among these are important regulations regarding the administration of justice, the management of the Goa hospital, military and commercial matters. The references to the contemporary history of Muhanmadan India are not very many. There are, however, some diplomatic documents referring to Bijápúr.

In the preface to his third fasciculus, Sr. da Cunha Rivara discusses an interesting question regarding some of the 16th century records. During the 16th and 17th centuries, the intercourse between India and Portugal was chiefly carried on by annual fleets to and fro, and the annual letters that they carried. As the arrival and despatch of the fleets were regulated by the monsoons, the registers containing copies of official letters were known as the 'Livros das Monçoens,' 'Books of the Monsoons.' At the time Sr. Rivara wrote his preface, the record rooms at Goa appear to have contained fragments of the "Livros" for the years 1568 and 1583, then a series from 1584 to about the end of the century, and then (after a gap of fifty years) a continuous series from 1651 to modern times. It was long believed that the absence of the "Livros" earlier than 1568 had been caused by the Marquis de Pombal, under whose orders sixty volumes of the series were despatched to Portugal in 1777. Sr. Rivara, however, proves that the sixty volumes so despatched, were those between 1606 and 1651, and that *they* at least are safely housed in the Torre do Tombo at Lisbon. About the same time, and in obedience to the same order all the ecclesiastical records of an early date were also sent to Lisbon, but these, it seems, have been lost sight of.

I believe I am right in adding that the remaining "Livros das Mançoens" have been recently transmitted to Lisbon, since the publication of Sr. Rivara's Arquivo. Possibly some of the missing records are to be found in our own British Museum ; for Sir Emerson Tennent in the introduction to his "Ceylon" writes—"Within the last few years, the Trustees of the British

Museum purchased from the library of the late Lord Stuart de Rothesay the diplomatic correspondence and papers of Sebastiao Jozé Carvalho e Melo (Portuguese Ambassador at London and Vienna, and subsequently known as the Marquis de Pombal) from 1738 to 1747, including sixty volumes relating to the history of the Portuguese possessions in India and Brazil during the 16th, 17th and 18th centuries. Amongst the latter are forty volumes of despatches relative to India entitled *Collecção Authentica de todas as Leys, Regimentos, Alvarás e mais ordens que se expediram para a India, desde o estabelecimento destas conquistas. Ordenada por proviram de 28 de Marco de 1751.* Mss. Brit. Mus., Nos. 20,861 to 20,900."

The "Arquivo" is so far defective that it only gives the outward despatches and letters from Lisbon to Goa together with other documents issued in India. It does not give despatches from Goa to Lisbon, which would be of yet greater value to the student of Indian History. I cannot gather from Sr. Rivara's preface to the third fasciculus where these are, nor does he expressly state that the early "Livros das Monções" are lost beyond recovery. Perhaps the introduction to his first fasciculus, which I have not been able to obtain, throws some light on these points. This much is certain. The Torre do Tombo and other libraries at Lisbon contain a number of valuable records of both the 16th and the 17th century, though it would seem from the preface to "Gaspar Correa" that they are not valued as they deserve to be. I must add that Sr. Rivara's "Arquivo," though *richer* towards the end, contains a great many documents belonging to the early part of the 16th century. The early "Livros das Monções" have been lost, but there were other early records which Sr. Rivara by publication has saved from a similar fate.

Many articles of historical and antiquarian value have been published in the "Boletim do Governo," the "Government Gazette" of Portuguese India. Among those of recent numbers may be enumerated the "Capitulos de um livro inedito," containing information as to ecclesiastical matters in the 17th century, and a series of Treaties of the same period. Many similar articles are scattered through back numbers of the Boletim, including, I believe, an account of the records by Sr. Felipe Neri Xavier. I hope Sr. Rivara, under whose auspices the majority have been published, will collect and republish these papers in a separate form. It is much to have saved ancient records from destruction, but the service to History will be enhanced by republication. Papers are not readily accessible when scattered through the old files of a Gazette.

I may mention here that Sr. Rivara in addition to the numerous publications above referred to, is the author or editor of several other important works more or less connected with our present subject; among these an historical essay on the Concan, or dialect, of Goa; a dictionary and grammar of the same;

a publication regarding village communities; and several regarding the ecclesiastical rights of the Crown of Portugal and the Archbishop of Goa—vexed questions among the Roman Catholics of India.

Two facts regarding other records may be added from Day's Cochin.

1. The Dutch Government records of Cochin are, it seems, still there, and apparently the early volumes refer to the capture, or to the period immediately following the capture, from the Portuguese (page 121).

2. The records of the Verapoly Monastery were lost in the river, as the priests were endeavouring to carry them away from Tippu's troops in 1790 (Chronology at end of book).

So far I have only referred to European accounts of Portuguese India, but what Indian authors are there on the subject? Hindús, who care so little for history, are not likely to give us much help, but it is different with Muhammadans. They are given to chronicle writing, and we may fairly expect some account of the Portuguese from them. As yet, however, I have not found any special Muhammadan history on the subject, except the "*Tuhfat ul Mujahidín*." This is a valuable work, as it describes the wars of the Portuguese and Muhammadans between 1498 and 1583, from a Muhammadan point of view. There is an English translation, No. 30, in the series of the Oriental Translation Committee.

Firishtah must be consulted, because his histories of the Dakhin States are so full, and refer specially to the period when the Portuguese power was at its height. The eleventh chapter, on the Muhammadans in Malabar, is founded on the *Tuhfat ul Mujahidín*. Besides this, Briggs gives in an appendix an epitome of the wars of the Portuguese in India. But Firishtah's allusions to the Portuguese, except in the eleventh chapter, are very meagre. He gives a brief account of the death of King Bahádur, and of the siege of Chaul by Burhán Nizám Sháh in 1592, but he does not even mention the great siege of Dfú. Still the constant references to the Muhammadan kings by Portuguese historians, and the constant intercourse that must have gone on between the Orientals and the European invaders, render it necessary to consult Firishtah.

Next to Firishtah may be mentioned the *Mir-át i Ahmadi*, with its translation by Bird, and the *Mir-át i Sikandari*, on which the *Mir-át i Ahmadi* was founded.

Firishtah's History of Bijápúr was prematurely closed in 1596, while we seek for information down to 1663. The following supplementary histories of the Dakhin states and particularly of Bijápúr, the one that had most dealings with Goa, are described in Mr. Morley's list of the historical manuscripts preserved in the Library of the Royal Asiatic Society.

Tazkirah i Ahwál i Salāṭin i Bijápúr, composed in 1806 from two earlier histories of the 'Adil Sháhí dynasty. Morley describes this work as concise, but valuable.

*Basātin* us *Salātin*. This is also a modern manuscript (1824), but the preface enumerates the authorities from which it was compiled.

*Muntakhab i Tawārīkh i Bahri*, containing a history of the *Nizāmshāhī* dynasty.

*Tārīkh i Sulṭān Muhammad Qutbshāhī*, a history of the *Qutbshāhī* dynasty of Golkonda; an abridgement of this is also given in *Brigg's Firishtah*. Mr. Bird in his account of *Bijāpūr* refers to another history the "*Tārīkh i Haft kursi*" and also to the "*Tārīkh i Asad Khānī*," which he appears to consider as the same work under a different name. He says that the "*Tārīkh i Haft kursi*" was written in the reign of 'Alī 'Adil Shāh II. (1656 to 1672).

I have not seen any of these manuscript histories of the *Dakhin* states, but mention them as to some extent bearing on the subject. The names given by Portuguese authors are frequently unintelligible until compared with Persian accounts. But it is not likely that any of these histories give more than casual allusions to the Portuguese.

Passing from the *Dakhin* to the *Mughul* histories—

The *Tabaqat i Akbarī* contains a few references to the Portuguese, including an account of King *Bahādur's* death. It refers also to the construction of the *Surat* fort against the depredations of the Portuguese.

The *Akbarnāmah* refers to King *Bahādur's* death, and gives some account of the Jesuit missions at Akbar's court. Probably it contains other references to the Portuguese, but I have not yet examined the *Akbarnāmah*. I hope Mr. Blochmann, who is so well acquainted with the Persian histories of this period, will add some further account of these references. The *Inshā i Abulfazl* contains a letter from Akbar, a translation of which is given by Hough in his second volume, page 261. This is said to have been intended for the King of Portugal, but the address in my copy of the *Inshā* is "*Dānāyān i Farang*," as though intended for the Jesuits.

The *Muntakhab ul-tawārīkh* of *Badāonī* also refers to *Diū* and to the Jesuit missions at Akbar's court. Mr. Blochmann's extracts, attached in a note to the 77th *Āin*, read with the Jesuit account, give a vivid picture of Akbar and his court.

The *Dabistān* contains an account of the Christian religion derived from the Portuguese priests, and gives a sample of the discussions before Akbar.

The *Tuzuk i Jahāngiri* alludes in several places to *Muqarrab Khān* and to *Surat* affairs. One passage appears to refer to the attack by Azevedo on Downton's ships in 1614. Elsewhere the *Tuzuk* refers to presents from the Portuguese and to some Portuguese in *Jahāngir's* employ.

The *Pādishāhnāmah*, page 433, Vol. I, gives a detailed account of the siege and capture of *Hūglī*. Farther on, this is again referred to in letters to *Nazr Muhammad Khān*, the ruler of *Balkh*, and to the *Shāh* of *Persia*. At

page 534, the fate of the captives is described. In the second volume, there is an account of the Portuguese at Chittagong.

Kháfi Khán, the most useful of the Muhammadan historians after Firishtah, also gives an account of the siege of Húglí, prefixing to it an interesting description of the Portuguese from his point of view. A fuller description is found in the second volume, page 400, reign of 'Álamgir.

Mr. Blochmann, to whom I am indebted for several of the above references, tells me that the Portuguese are frequently mentioned in the *Maísir ul Umará*, a work containing biographies of the great men of the Mughul empire, and that there are occasional bigoted allusions to them in the *Farhang i Rashidí*, a Persian dictionary written in 1653.

A certain amount of information is scattered through different periodicals. No. 3 of the *Calcutta Review* contains an article on the Jesuit missions; No. 10, the Portuguese in North India; No. 51, the Shiry Family; No. 57, the Inquisition at Goa; No. 77, the Life of Xavier; Nos. 102 and 103, Topography of the Mogul Empire; No. 105, the Feringhees of Chittagong.

The Asiatic Researches contain articles on Malabar; The Syrian Christians; Nobili's imitation of the Veda; and Bijápúr.

The Bengal Asiatic Society's Journal is singularly deficient in articles bearing on our subject. The volume for 1841 mentions the Portuguese in connection with Arakan. That for 1843 contains an interesting account of Abyssinia, and the Portuguese missions there, and the volume for 1844 contains an article called "Political events in the Carnatic from 1564 to 1687," which may be considered to have a distant connection with the contemporary history of Portuguese India. There is also a modern account of Socotra, but so far as I have seen, there is not a single article devoted specially to Portuguese Asia.

The Journal of the Royal Asiatic Society is as deficient as our own in this respect. I cannot find a single article specially devoted to Portuguese India, but the following appear to have a distant bearing on the subject; Vol. II, Transactions, Diplomatic relations between the courts of Delhi and Constantinople, in the 16 and 17 centuries. Vols. I and II, Journal, Memoir on the Syrian Christians; Vol. II, Sea ports on the coast of Malabar; Vol. V, (or VI,?) account of the Sherley family; Vol. VII, Tribes of the Northern Concan; Vol. V (new series), on Malabar, &c.

The last series of the "Journal Asiatique" gives no help. I have not seen the earlier series. We might expect more assistance from Bombay, as that Presidency has been always intimately connected with Portuguese India. But so far as I have ascertained, there is not much. Vol. II of the Bombay Literary Transactions contains a Turkish account of a naval expedition in the sixteenth century with references to the Portuguese. I have not seen Vol. III., but I believe it contains a description of Bijápúr, and

possibly, some other articles connected with the subject. I believe there are some articles in the Journal of the Bombay Geographical Society. The Journal of the Bombay Asiatic Society contains (1841) Translations from De Couto; (1844) Bird's description of Bijápúr; (1849) Maráthi works composed by the Portuguese; (1868) Translations of Portuguese Inscriptions found at Bombay.

The Bombay Quarterly Review, vol. 4, contains an interesting article by the late Mr. Anderson regarding the capture of Bassein and other Portuguese forts between Bombay and Daman by the Maráthas. This, however, was in the eighteenth century, and our present review does not extend to a later date than 1663.

Doubtless there are numerous articles scattered through the Journals and Proceedings of the various Societies at Madras, Singapore, Batavia, Amsterdam, and Lisbon, but these I have not yet examined.

More valuable than most of the above, for our present purpose, is the "Chronista de Tissuary," a periodical which appeared at Goa under the editorship of Sr. Rivara, between 1866 and 1869. Every article in this is of value, though many refer to a period in the history of Portuguese India later than that under review. It contains among other papers an account of transactions with 'Adil Sháh, treaties of peace with Jahángír and Sháh Jahán, descriptions of the Portuguese fortresses as they were in 1634, and notes of the inscriptions existing at the present day. Copies of the inscriptions with which the fortress of Díú is covered, have been published by Sr. Rivara in a separate pamphlet.

The "Gabinete Litterario das Fontainhas" appears to have been a similar periodical of earlier date. This statement, however, is subject to correction, as I have not seen the "Gabinete Litterario."

The above summary of authorities regarding Portuguese India has been prepared, partly from a list given me by Sr. Rivara, partly from Faria y Sousa, and partly from other books in my possession. Sr. Rivara who is a member of the Bombay Asiatic Society, will be able to enlarge the list and to correct any details that may be faulty where Portuguese authors are referred to. I hope he will do me this favour, and if Mr. Blochmann will kindly render the same service where Muhammadan authors are quoted, or where other information may be available in the Society's Library, it will be a great assistance to students interested in the subject.



*Contributions to the Geography and History of Bengal (Muhammadan Period).—PART I., Geographical.—PART II., Historical, based on Inscriptions received from GENERAL A. CUNNINGHAM, C. S. I., DR. J. WISE, E. V. WESTMACOTT, Esq., W. L. HEELEY, Esq., WALTER M. BOURKE, Esq., &c., and on unpublished coins, with notes by E. V. WESTMACOTT, Esq., and DR. J. WISE.—By H. BLOCHMANN, M. A., Calcutta Madrasah.*

In the end of last year, General Cunningham, Director of the Archaeological Survey of India, forwarded to the Asiatic Society, for publication in the Journal, a unique collection of rubbings of Muhammadan inscriptions from Bengal and various places up-country, and in the Proceedings of our Society for January last, I gave an account of the importance of these rubbings with reference to the history of Bengal. Dr. J. Wise of Dacca, Mr. Walter Bourke, Mr. E. V. Westmacott, C. S., and Mr. W. L. Heeley, C. S., have also favoured the Society with valuable rubbings and notes on the localities where they were obtained, and I shall delay no longer to carry out the wishes of the donors and publish my readings with a few notes suggested by the subject. I have also examined our coin cabinet, which I found to contain some unpublished Bengal coins of great value.

The importance of mural and medallie evidence for Bengal History arises from the paucity and meagreness of written sources. Whilst for the history of the Dihlī Empire we possess general and special histories, often the work of contemporaneous writers, we have only secondary sources and incidental remarks for the early Muhammadan period of Bengal, *i. e.*, from A. D., 1203 to 1538. Nizāmuddīn Ahmad, who served Akbar as Bakhshī, the friend and protector of the historian Badāonī, is the first writer that gives in his *Ṭabaqāt i Akbarī*, which were completed in 1590, a short connected account of the independent kings of Bengal from 1338 to 1538. For the time between 1203 and 1338, we depend on incidental remarks made by Dihlī writers, as *Minhāj i Sirāj*, Baranī, and 'Aṣif. Firishtah, who flourished in the beginning of the 17th century, has a chapter on the same period as Nizām; but though he gives a little more, it seems that he used the same, at present unknown, source as the author of the *Ṭabaqāt i Akbarī*. But there can be no doubt that this source was a work defective in chronology and meagre in details. Firishtah also cites a historical compilation by one Hājī Muhammad of Qandahār, of which no copy is at present known to exist.

The latest writer on Bengal History is Ghulām Husain of Zaidpūr, poetically styled 'Salīm,' who composed his *Riyāzussalāṭīn*, or 'the Gardens of Kings,' at the request of Mr. George Udney of Māldah. This work, the



title of which contains in the numerical value of the letters the date of its completion (A. H. 1202, or A. D. 1787-88), is rare, but is much prized as being the fullest account in Persian of the Muhammadan History of Bengal, which the author brings down to his own time. From a comparison of his work with that by Firishtah, it is evident that for the early portion he has used books which are likewise unknown at present, and it is unfortunate that his preface gives no information on this point.\* His additional source, it is true, cannot have been a work of considerable size; yet he gives valuable dates which, as will be seen below, are often confirmed by collateral evidence. Salim has also made a fair use of the antiquities of the Gaur District. Stewart, who used the Riyáz as the basis of his History of Bengal, has given a translation of the greater part of the work; but from a leaning to Firishtah he has left out useful passages, which will be found below.

A commentary on Inscriptions necessarily contains references to the history and the geography of the country; but in order not to overload the subject with unconnected remarks, I have, in the following, separated the geographical from the historical portion, and have thus found means to collect, in a convenient way, numerous stray notes which for several years have been accumulating in the course of my historical studies.

\* When quoting this unknown source, Salim uses phrases as '*dar risálah o dóláham,*' 'I have seen in some pamphlet,' or '*ba-qaule,*' 'according to another statement,' &c.

The Asiatic Society Library has one MS. of the Riyázussalá'tín (No. 526), written in bold *shikastah*, 277 pages, 8vo., 15 lines per page, copied in 1851 at Hajipur by one Sadraddin Ahmad. Beginning—*Jahán jahán hanul sazawár i bārgāh i jahán-āfarīne ast, kih ín mazáhir i kaunt-rá ba-yawt i qudrat i kámilah i khwēsh ba-hilyah i wujūd muhalla sákhtah*, &c. The work consists of a Preface in four parts, and four Chapters, of which the last contains two parts. The end contains the following description of the character of the "new rulers"—

"The English among the Christians are adorned with the head-dress of wisdom and skill, and ornamented with the garb of generosity and good manners. In resolution, activity in war, and in festivities, in administering justice and helping the oppressed, they are unrivalled; and their truthfulness is so great, that they would not break a promise, should they even lose their lives. They admit no liar to their society, are pious, faithful, pitiful, and honorable. They have neither learnt the letters of deceit, nor have they read the page of vice; and though their religion is opposed to ours, they do not interfere with the religion, rites, and propagation of the Muhammadan faith.

گفتگوی کفر و دین آخر یکجا میکشد خواب يك خواب است باشد مختلف تعبیرها

All wrangling about faith and heresy leads to the same place: the dream is one and the same dream, though the interpretations may differ."

## PART I.—GEOGRAPHICAL.

Before the conquest of Bengal by the Muhammadans under Bakhtyār Khiljī in A. D. 1203, Bengal is said to have been divided into five districts—(1) Rāḍha, the country west of the Hūgli and south of the Ganges; (2) Bagḍi, the delta of the Ganges; (3) Banga, the country to the east of, and beyond, the delta; (4) Barendra, the country to the north of the Padma (Podda) and between the Karatayā and the Mahānandā rivers; and (5) Mithilā, the country west of the Mahānandā. We do not know whether these names refer to revenue districts, or merely indicate (as they now do) popular divisions based upon the course of principal rivers; but as the different orders of Brāhmanas and Kāvasths take their distinctive names from these divisions, it may be assumed that they existed or were recognized at the time of Ballāla Sen, who classified the two castes.

The case with which Bakhtyār Khiljī took possession of Bengal by his surprise of Nadiyā,\* the then capital, stands unparalleled in history, unless we compare it with the almost peaceful transfer of the same country, five hundred and fifty-five years later, from the Muhammadans to the East India Company. But it would be wrong to believe that Bakhtyār Khiljī conquered the whole of Bengal: he merely took possession of the south-eastern parts of Mithilā, Barendra, the northern portions of Rāḍha, and the north-western tracts of Bagḍi. This conquered territory received from its capital the name of Lak'hnauti, and its extent is described by the author of the *Ṭabaqāt i Nāqirī*, who says that the country of Lak'hnauti lies to both sides of the Ganges and consists of two wings: the eastern one is called Barendra, to which Deokot belongs; and the western has the name of Rāl [*i. e.*, Rāḍha], to which Lak'hnūr belongs. Hence the same writer also distinguishes† Lak'hnauti-Deokot from Lak'hnauti-Lak'hnūr. From the town of Lak'hnauti to Deokot on the one side, and from Lak'hnauti to the door of Lak'hnūr, on the other side, an embanked road (*puḷ*) passes, ten days' march. Distinct from the country of Lak'hnauti is Banga (*diyār i Bang*, Bangadesh, *Ṭabaqāt*, p. 267), and in this part of Bengal the descendants of the Lak'hmaniyah kings of Nadiyā still reigned in A. H. 658, or 1260, A. D., when Minhāj i Sirāj, the author of the *Ṭabaqāt*, wrote his history.‡ Deokot, which still gives name to a large parganah, was correctly identified by Buchanan with the old fort near Damdamā, on the left bank of the Purnā-

\* Lak'hman Sen, the last king of Bengal, though called king, cannot have been much more than the principal zamīndār of his time. "He was a liberal man," says the author of the *Ṭabaqāt*, "and never gave less than a lak'h of cowries, when he made a present—may God lessen his punishment in hell!"

† *Ṭabaqāt*, pp. 162, 242.

‡ *Ṭabaqāt Nāqirī*, p. 151. Thus an expedition against Banga by the governor of Lak'hnauti is mentioned in 657. *Ṭabaqāt Nāqirī*, p. 267.

bhaba, south of Dínájpúr. Close to it lies Gangarámpúr with its ruins, and the oldest Muhammadan inscription known in Bengal.\* Lak'hnúṛ,† the town or 'thanah' of the other "wing," has not yet been identified. The name occurs in no Muhammadan history after the time of the Ṭabaqát i Náṣirí, and the only hint given is, that it lay west of the Húgli, on the road, at about the same distance from Lak'hnautí city as Deokot lay from the capital—which would be the northern portion of District Bírghúm.

Minháḡ's remark that Banga was, in 1260, still in the hands of Lak'h-man Sen's descendants, is confirmed by the fact that Sunnárgháon is not mentioned in the Ṭabaqát; nor does it occur on the coins of the first century of Muhammadan rule. It is first mentioned in the *Tárikh i Baraní* as the residence, during Balban's reign, of an independent Rái; but under Tughluq Sháh (A. D. 1323), Sunnárgháon and Sátgháon, which likewise appears for the first time, are the seats of Muhammadan governors, the term 'Bangálah' being now applied to the united provinces of Lak'hnautí, Sátgháon, and Sunnárgháon.‡

The *Tárikh i Baraní*, the *Tárikh i Fíruzsháhí* by 'Afif, and the *Travels* of Ibn Batúṭah yield but little additional information. Fíruzabád, or Paṇduah (north of Máldahá, or Máldah) which General Cunningham significantly calls 'Hazrat Paṇduah,' or 'Paṇduah, the Residence,' appears as the new capital, and in connexion with it Fort Ekdáláh, said to be 'near Paṇduah.' The actual site of this fort is still a matter of doubt; even the

\* Of Kai Káuś Sháh, A. D. 1297. *Journal*, A. S. B., 1872, Pt. I., p. 102.

† Major Raverty, of whose translation of the *Ṭabaqát* two fasciculi have just appeared, informs me that all his best MSS. have لکھنور, Lak'hnúṛ. The *Bibliotheca Indica* edition has لکھنر, and often also لکور; and it was, no doubt, the last spelling that led Stewart to substitute Nágor (in western Bírghúm), which certainly lies in the direction indicated. Outside of the Maráthá wall of Nágor, we have a Lak'hí-púr and a Lak'hínaráyanpúr.

‡ Baraní, p. 452. He spells Satgháon, not Sátgháon. It is almost useless to remark on the geography of Bengal as given in the *Ṭabaqát* before the appearance of Major Raverty's translation, who has collated nearly all existing MSS. of the work. The *Bibliotheca Indica* edition is untrustworthy. Taking it, however, as it is, we find the following places mentioned—Núdiyah, in this spelling, for Nadiyá; Lak'hnautí; Banga; Bál (Ráḡha); Barendra; Lak'hnúṛ; Deokot; Narkotí (?), ديار كوني, ناركوتي, pp. 156 to 158; ككنوري, ككنوري (?), p. 158; مكيدہ (?), and منطوس (perhaps سنترس), p. 158; Bangáon, p. 153; Fort Bishnkoṭ, founded by Husámmaddín 'Iwaz near Lak'hnautí, pp. 180, 243. Besides these, a few places are mentioned on the frontiers of Bengal, as Kámrúd (always with this spelling) for Kámrúp; ديار سکنات, Jagannáth (Púrí) ?; and a few places in Káśm or Tibbat; ارسردن, p. 263; and Jájnapar, regarding which vide below.

The *Tárikh i Firishtah* furnishes the isolated fact of the foundation of Rangpár by Bakhtiyár Khiljí on the frontier of Bengal (Lucknow Edition, p. 293).

author of the *Riyázussaláṭīn*, who lived in the neighbourhood of Máldah and Paṇḍuah, says nothing about it.\*

About 850 A. H. (A. D. 1446), during the reign of Nāṣiruddīn Mahmūd Shāh, the capital was transferred to Gaur. Thus Lak'hnauti is henceforth again called in history. The transfer, though it may have been connected with the restoration of an old dynasty, was unfortunate. Gaur lies in the middle between the Ganges and the Mahānandā, thus occupying, as is the case in all Deltaic lands, the lowest site; and east of it lies the Kallak Sajá marsh, called in the *Āin Chuttiá-pattiá*, into which the drainage of the town opened. Every increase in the waters of the Ganges caused the marsh, which is connected with it, to rise, and "if the [earthen] embankment broke, the town was under water,"† and the drainage was driven back into the town. Hence the removal of the capital, a short time afterwards, to Tāṇḍah,‡ and the ultimate desertion of the town as a fever centre for Ráj-mahall.

The meagre information supplied by the Ṭabaqāt i Nizāmī and Firish-tah throws no further light on the geography of Bengal, but leaves the impression that during the reigns of the independent kings (A. H. 739 to 944, or A. D., 1338 to 1538) the extent of Muhammadan Bengal was the same as what we find it in A. D. 1582, the year in which Todar Mall prepared his rent-roll of Bengal, a copy of which Abul Fazl has given in the *Āin*.

The coins and inscriptions of the above period yield a few particulars. We have the seven Bengal mint towns given by Thomas,§ to which I can

\* Mr. Thomas compares with Ekdálah the name of 'Jugdula,' a village east of Hazrat Paṇḍuah, towards the Purnábhaba. The Indian Atlas Sheet No. 119 also mentions a village Jagdal due north of Máldahá, near the Mahānandā, in Lat. 25° 17' 30", and a 'Jugdul' and a 'Juglal' will be found south-east of Gaur, Long. 88° 28', Lat. 24° 42'. Even in other parts the name is common; for Jagdal is the Bangálí 'Jogoddul,' 'a leaf of the world,' the world being the lotus, and each town a petal of it. Another Ekdálah will be found on the same sheet, south-east of Bogra (Bagurá), Long. 89° 40' 30", Lat. 24° 35' 15", and a third is in Rájsháhí, a little south-west of Nátor. The name seems to be the Bangálí জগদলা, 'having one wing;' and Dodalá 'having two wings,' occurs likewise as a name of villages.

† *Āin i Akbari*.

‡ Rennell marks 'Tarah' near the Paglá River (a branch of the Ganges and perhaps the old bed of the river), south-west of the fort of Gaur. "Tanda standeth from the river Ganges a league, because in times past the river flowing over the banks, in time of rains did drown the countrey and many villages, and so they do remaine. And the old way the river Ganges was wont to run, remaineth drie, which is the occasion that the citie doeth stand so farre from the water." Ralph Fitch.

The losses of Akbar's Bengal army in Gaur will be found in my *Āin* translation, p. 376.

§ Lak'hnauti, Fírúsábád (Paṇḍuah), Sátgáon, Shahr i Nau (?), Ghiyáspúr, Sunnārgáon, and Mu'azzamábád. *Chronicles*, p. 151.

now add three more, *viz.* Fathábád, Khalifatábád, and Husainábád, which will be discussed below. The inscriptions reveal the important fact, that Bengal was divided into revenue divisions called Mahalls, over which, as in the Dillí empire, Shiqdárs\* were placed, and into larger circles under 'Sarlashkars,' or military commanders, who have often also the title of Vazir (Diwán). Of places mentioned on inscriptions I may cite—Iqlím Mu'az-zamábád (Eastern Maimansingh); Thánah Liúr (north-western Silhat,—both occur also united under the same Sarlashkar); Sarhat, in western Bírghúm, now in the Santal Parganahs; Láopallah, east of the Island in the Húglí opposite Tribení Ghát, evidently in olden times an important place as lying at the point where the Jabuná leaves the Húglí and commences her tortuous course, first easterly, then southerly, into the Sundarban;† and also several places which have not yet been identified, as Simlábád, Hádigarh, and Sájlá-Mankhibád.‡

From the middle of the 16th century we have the works and maps of Portuguese historians, notably the classical 'Da Asia' by Joao de Barros (died 1570); and the graphic descriptions of Cosar Frederick (1570) and Ralph Fitch (1583 to 1591). Nor must I forget the Persian traveller Amín Rázi, an uncle of Núr Jahán, who composed his 'Haft Iqlím' in A. H. 1032 (A. D. 1594); but it is doubtful whether he visited Bengal, or merely wrote down what he heard at Agra. I shall occasionally refer to the works of these travellers below.§

But by far the most interesting contribution to the geography of Bengal, in spite of the unsatisfactory state of the MSS., is Todar Mall's rent-roll. Though of 1582, it may be assumed that Todar Mall merely gave in it what he found to exist with regard to both divisions and revenue; for Bengal was only subjugated during Jahángir's reign, and properly assessed

\* How extensively the Hindús were employed as revenue officers may be seen from the fact that the Arabic-Persian *Shiqdár* and *Majmú'ahdár* have become Bangálí family names, generally spelt 'Sikdar' and 'Mozoomdar.'

† The island opposite Tribení has a conspicuous place on De Barros' Map of Bengal and on that by Blaeu (*vide* Pl. IV.). The maps also agree with Abul Fazl's statement in the *Áin*, that at Tribení there are three branches, one the Saraswatí, on which Sâtgáo lies; the other, the Ganga, now called the Húglí; and the third, the Jon or Jabuná (Jamuná). De Barros and Blaeu's Maps show the three branches of almost equal thickness, the Saraswatí passing Satigam (Sâtgáo), and Chouma (Chaumuhá in Húglí District, north), and the Jabuná flowing westwards to Buram (Bozhan, in the 24-Parganahs).

‡ Journal, A. S. Bengal, 1870, Pt. I., p. 234.

§ I have not mentioned Nicolò de Conti's Travels (1419 to 1444, A. D.), because he only mentions one town in Bengal, *Cernoe* on the Ganges, which Col. Yule has identified with the 'Shahr i Nau,' or 'New Town' on Sikandar Sháh's coin of 1379 (Thomas, In. Coinage of Bengal, Journal, A. S. Bengal, 1867, p. 65); but the position of this town is still a matter of doubt.

by Prince Shujá' a short time before 1658. In the *Áin* we find that Bengal proper was divided into 19 Sirkárs, and 682 Mahalls. Eight of the 19 Sirkárs, and 204 of the 682 Mahalls, have Muhammadan names. The rent-roll included both the *khálīqah* ('genuine,' *vulgo* khalsa) or crownlands, and the *aqtá* or *jágír* lands, *i. e.* lands assigned to officers in lieu of pay or maintenance of troops. The distribution of the Sirkárs depended, as in the old Hindú division, on the courses of the Ganges, Bhagirathí, and Megna, or, as the *Áin* expresses it, on the courses of the Padmáwatí, Ganga, and Brahmaputra, as will be seen from the following list of the Sirkárs.

#### *A. Sirkárs North and East of the Ganges.*

1. Sirkár Lak'hnaúti, or Jannatábád, extending from Taliágarhí (K'halgáon, Colgong) along the northern banks of the Ganges, and including a few mahalls now belonging to district Bhágalpúr and Púrniah, and nearly the whole of Máldah district. Besides Gaur, this Sirkár contained the ancient town of Rángamāti.\* 66 mahalls; khalsa revenue, Rs. 471,174.†

2. Sirkár Púrniah, or Púranniah, the greater and chiefly westerly portion of the present district of Púrniah, as far as the Mahánanda.‡ 9 mahalls; revenue Rs. 160,219.

3. Sirkár Tájpúr, extending over Eastern Púrniah east of the Mahánanda, and Western Dinájpúr. 29 mahalls; revenue, Rs. 162,096.

4. Sirkár Panjrah, so called from the Hawelí mahall Panjrah, north-east of the town of Dinájpúr, on the Atrai River, comprising the greater part of Dinájpúr district. 21 mahalls; revenue, Rs. 145,081.

5. Sirkár G'horág'hát, so called from the town of G'horág'hát or Chauk'handi on the right bank of the Karatayá, comprising portions of Dinájpúr, Rangpúr, and Bagurá (Bograh) districts, as far as the Brahmaputra. Being a frontier district towards Koch Bihár and Koch Hájo, it contained numerous jágír lands of Afghán chiefs and their descendants. The Sirkár produced a great deal of raw silk. 88 mahalls; revenue, Rs. 202,077.§

6. Sirkár Bárbakábád, so called from Bárbak Sháh, king of Bengal (*vide* below), and extending from Sirkár Lak'hnaúti along the Podda to Bagurá. It comprises portions of Máldah and Dinájpúr, and a large part of Itájhálí, and Bagurá. Its cloths were well known, especially the stuffs

\* Máldah is once mentioned in the *Tuzuk-i-Jahángír* (p. 178)—"When I [Jahángír] was prince, I had made a promise to Mír Ziyáuddin of Qazwín, a Saifi Sayyid, who has since received the title of Muṭṭafá Khán, to give him and his children Parganah Máldah, a well known Parganah in Bengal. This promise was now performed (A. D. 1617).

† Akbarsháhí Rupees (1 Rupee = 40 dáms). Grant substitutes 'Sicca Rupees,' at 2s. 3d.

‡ It seems as if the Mahánanda, in its upper course, is often called Mahánadi. Van den Broucke calls it on his map 'Martnade.'

§ Some MSS. have 209,577 Rs.

called *khāṣah* (the “koses” of old writers) as the *khāṣah* of Shahbāzpūr, the *ṣahan* (صحان, the ‘sanēs,’ or ‘sahnes’ of Dutch writers), and the *múminī*. 38 mahalls; revenue, Rs. 436,288.

7. *Sirkār Bāzúhá*, extending from the preceding across the Brahmaputra into Silhaṭ, comprising portions of Rājsháhí, Bagurá, Pabná, Maiman Singh, and reaching in the south a little beyond the town of Dháká (Dacca).<sup>\*</sup> The name ‘Bāzúhá’ is the plural of the Persian word *bāzú*, ‘an arm, a wing;’ and all mahalls in this *Sirkār* have the word *bāzú* after their name, which on our survey maps appears under the Bangálí form ‘Bajoo.’† 32 mahalls; revenue, the largest of all *Sirkárs*, Rs. 987,921. To this *Sirkār* belonged Dháká, and Sherpúr Murcha, or Mihmānsháhí, south of Bagurá on the Karataya, which is several times mentioned in the Akbarnámah as a military station.

8. *Sirkār Silhaṭ*, adjacent to the preceding, chiefly east of the Surmá River. As will be seen below, the country was only conquered by the Muhammadans in the end of the 14th century, and was exposed to continual invasions from Tiparah and Ásám. According to Marco Polo, the Áin, and the Tuzuk, Silhaṭ supplied India with eunuchs. Jahángír issued an edict forbidding the people of Silhaṭ to castrate boys. Like Kámrúp, Silhaṭ is also often mentioned as the land of wizards and witches, and the fame of its *jálú*, or witchcraft, is still remembered at the present day. 8 mahalls; revenue, Rs. 167,032.

9. *Sirkār Sunnārgáon*, to both sides of the Megna and the Brahmaputra, containing portions of western Tiparah, Bhaluá, and Noák'háli, subject to repeated attacks by the Rájahs of Tiparah and Arakan. 52 mahalls; revenue, Rs. 258,283. The *Haft Iqlím* gives Rs. 330,000.

<sup>\*</sup> Stewart says that Dháká is a modern town, “because the name does not occur in the Áin.” But it does; *vide* my text edition, p. 407, where the Mahall to which it belongs, is called Dhakká Bázú. In Gladwin's spelling ‘Dukha Bazoo’ it is, however, scarcely recognizable. Dháká occurs in the Akbarnámah as an Imperial thánah in 1584; and Sir A. Phayre (*vide* above, p. 53) mentions it in 1400.

† Thus the country west of Pabna is called ‘Bajooras’ and east of it ‘Bajoochup’—corruptions of *Bázú i rást*, ‘the right wing,’ and *Bázú i chap* ‘the left wing.’ Other corruptions are—Esub, or Eshub, or Esop, or Isaf, for ‘Yúsaf;’ thus ‘Esubshye,’ for ‘Yúsuf-sháhí;’ Nasipore, for Nasíbpúr, (from Naṣīb Sháh); Nujseepore, for Najíbpúr; Haleeshur (opposite Tribeni) for Hálíshahr, = Hawelí i Shahr [Sátgáon]; Mahomedshye for Mahmúdasháhí, (Jessore); Bujitpore, for Báyzídpúr (in Dínájpúr); Juffurshye, for Zafarsháhí, (not Ja'farsháhí); Kali Modunpúr (which sounds like a Hindú name), Kalím-uddinpúr; Puladassy, north of Bagurá, for Fúládsháhí; Masidpore and Majidpore, for Maajidpúr (*vide* Beames, Comp. Grammar, p. 209).

In the spelling of Bengal names care should be taken with the frequent ending *daha*, ‘eddy,’ as Máldahá, spelt in Persiau Máldah; but the final *h* is radical, and the name should not be spelt Máldá, as Málwah, Rájah, &c., = Málwá, Rájá, &c.

Aurangzib forbade by edict spellings like Málwah, Rájah, &c.; he wanted people to spell Málwá, Rájá.

10. *Sirkár Chátgáon* (Chittagong), never properly annexed before the reign of Aurangzib. 7 mahalls; revenue, Rs. 285,607.

*B. Sirkárs in the Delta of the Ganges.*

11. *Sirkár Sátgáon*. A small portion only, the land between the Húglí and the Saraswatí, lay west of the Húglí, whilst the bulk of the Sirkár comprised the modern district of the 24-Parganahs to the Kabadak, western Nadiyá, south-western Murshidábád, and extended in the south to Hatiágarh below Diamond Harbour. To this Sirkár belonged Mahall Kalkattá (Calcutta) which, together with two other mauza's, paid, in 1582, a land revenue of Rs. 23,905. 53 mahalls; revenue, Rs. 418,118.

12. *Sirkár Mahmúdábád*, so called after one of the three Mahmúd Sháhs of Bengal, and comprising northern Nadiyá, northern Jessore, and western Faríd-púr. 88 mahalls; revenue, Rs. 290,256.

13. *Sirkár Khalífátábád*, or southern Jessore and western Báqirganj. The Sirkár is called after Khalífátábád, which was the name of the small Hawelí-parganah near Bágherhát (*vide* below). The largest mahall of this Sirkár was Jesar (Jessore), or Rasúlpúr; and among others, we find here the Mahalls Múndagáchha and Malikpúr, which the Khán i A'zam, when governor of Bengal under Akbar (*Ain* translation, p. 326), is said to have given to Bhabeshwar Rái, the ancestor of the present Rájahs of Jesar. The name of Jesar, therefore, occurs as early in 1582; hence Van den Broucke's map (1660) also gives it conspicuously as 'Jessore.\* 35 mahalls; revenue, Rs. 135,053.

14. *Sirkár Fathábád*, so called after Fath Sháh, king of Bengal, comprising a small portion of Jessore, the whole of Faríd-púr, southern Báqirganj, portions of Dháká district, and the Islands of Dak'hin Shahbázpúr, Sondíp, and Sidhú, at the mouth of the Megna. The town of Faríd-púr lies in the Hawelí Parganah of Fathábád. 3 mahalls, revenue, Rs. 199,239.

15. *Sirkár Baklá*,† or Ismá'íl-púr, north-east of the preceding, comprising portions of Báqirganj and Dháká districts. It is the *Bacala* of old maps. 4 mahalls; revenue, Rs. 178,756.

*C. Sirkárs South of the Ganges and West of the Bhagirathí (Húglí).*

16. *Sirkár Audambar*, or Tánḍah, comprising the greater portion of Murshidábád district, with portions of Bírghúm. The name Audambar occurs also in other parts of India, *e. g.* in Kachh.‡ Tánḍah did not long enjoy the position of capital: Sher Sháh already had made plans to remove it

\* *Vide*, however, Westland, Jessore Report, p. 29.

† The author of the *Siyarul Mutaakkharín* calls it Hoglá (هولاء), from the Bangálí word *hoglá*, which signifies marsh reed—a name which no doubt explains the name of Húglí; but he strangely confounds Sirkár Baklá with Sirkár Sátgáon (Húglí).

‡ *Vide* Cunningham, *Ancient Geography of India*, I, p. 248.



to Ag Mahall on the opposite bank. But this was only carried out by Rájah Mán Singh, who changed the name of Ag Mahall to Ráj Mahall, and subsequently to Akbarnagar. The same Sirkár became again in later times under Prince Shujá' the seat of government, and later still under Nawáb Ja'far Murshíd Qulí Khán, who changed the name of the old town of Makhçúçábád,\* the *Murabad* or *Muxadabad* of old maps, to Murshidábád. 52 mahalls; revenue, Rs. 601,985. The Haft Iqlím gives its revenue at Rs. 597,570.

17. Sirkár Sharífábád, south of the preceding, comprising the remaining portions of Bírghúm, and a large portion of Bardwán district, together with the town of Bardwán† itself. Mahalls Bárbak Singh and Fath Singh, so called after the Bengal kings Bárbak Sháh and Fath Sháh, and Sherpúr 'Atái, where Mán Singh defeated the Afgháns (Áin translation, p. 341) also belonged to this Sirkár. 26 mahalls; revenue, Rs. 562,218.

18. Sirkár Sulaimánábád, a straggling Sirkár, which comprised a few southern parganahs in the modern districts of Nadiyá, Bardwán, and the whole north of Húgli district. This Sirkár was so called after Sulaimán Shah of Bengal, who also called several parganahs after himself in Murshidábád, Jessore, and Báuringanj districts; but whether the name was too long, or was purposely changed after Akbar's conquest of Bengal in honor of Prince Salim (Jahángír), it only occurs now-a-days in the form 'Salimábád.' The chief town of the Sirkár was Salimábád [Sulaimánábád], on the left bank of the Damúdar, south-east of the town of Bardwán. It is marked as 'Silimath' on Van den Broucke's map. Olá (the old name of Bír Nagar) in Nadiyá, known from the Srimanta legend, and Pañduah, on the E. I. Railway, with its Buddhist ruins and ancient mosques, also belong to this Sirkár. 31 mahalls; revenue, Rs. 440,749.

19. Sirkár Madáran, extending in a semicircle from Nágór in Western Bírghúm over Rániganj along the Damúdar to above Bardwán, and from there over K'hand Ghosh, Jahánábád, Chaudrakoná (Western Húgli District) to Mandalghát, at the mouth of the Rúpnráyan River. 16 mahalls; revenue, Rs. 235,085.

Thus the above nineteen Sirkárs, which made up Bengal in 1582, paid a revenue on khalsa lands, inclusive of a few duties on salt, *húts*, and

\* The Akbarnámah mentions a Makhçúç Khán, brother of Sa'id Khán; vide my Áin translation, p. 388. Makhçúç Khán served in Bengal and Bihár, and his brother Sa'id Khán was for some time governor of Bengal.

† The Muhammadan pronunciation of the Bangálí *Bordomán*. The Haft Iqlím mentions an extraordinary custom that obtained in this Sirkár. "Feminae hujus provinciæ instrumentum quoddam fictile ponis instar in vulvam et in anum inferunt, ut sordes removeant. The old kings have in vain tried to break them off this habit."

Regarding the Muhammadan antiquities of Bardwán, vide Journal, As. Bengal, for 1871, Pt. 1, p. 254.

fisheries, of 253,482,106 dāms, or Rs. 6,337,052.\* According to Grant, the value of the jāgír lands was fixed at Rs. 4,348,892, so that we have, in 1582, A. D., as total revenue of Bengal, in its then circumscribed limits, the sum of Rs. 10,685,944. This was levied from the ryots in specie† as the equivalent of the *rub*’, or fourth share, of the entire produce of the land, claimed by the sovereign as despotic proprietary lord of the soil.

This rent-roll remained in force during the reign of Jahángír. The remittances from Bengal to Dihlí were, it is true, not very regular, nor up to the sums levied, so much so that Jahángír appointed, in the end of his reign, Fidái Khán, governor of Bengal, merely because he promised to send regularly one million of rupees to court. Under Sháhjahán, the boundaries of Bengal were extended in the South-West, Medinípur and Hijlí having been attached to Bengal, and in the East and North-East by conquests in Tiparah and Koch Hájo; and when Prince Shujá’ was made governor, he made, shortly before 1658, a new rent-roll, which shewed 34 Sirkárs and 1350 Mahalls, and a total of revenue, on khalsa and jāgír lands, of Rs. 13,115 907. Shujá’s rent-roll remained in force till 1722, an addition having been made after the conquest of Chátgáon. In that year, Nawáb Ja’far Khán (Murshid Qulí Khán) issued his *Kámil Jama’ Tumári*; or ‘Perfect Rent-roll,’ in which Bengal was divided into 34 Sirkárs, forming 13 Chaklahs, and sub-divided into 1660 Parganahs, with a revenue of Rs. 14,288,186.

It was, however, only after the rule of Nawáb Ja’far Khán that the *Abwáb* revenue‡ gradually appeared in the books. Though vast sums had been levied on this head, they had been looked upon as private emoluments of office. As early as in the tenure of Shujá’ Khán, Nawáb Ja’far’s successor, we find the Abwábs entered as yielding Rs. 2,172,952, and they rapidly increased under ‘Alí Virdí Khán and Qásim Khán, so that, when the E. I. Company in 1765 acquired the Diwání, the *net* amount of all revenue collected by authority in Bengal was Rs. 25,624,223.

It is not my intention to enter here further in the historical portion of the revenue question of Bengal, nor shall I minutely describe the Sirkárs and the Mahalls or detail the historical and geographical

\* Grant’s total is Rs. 6,344,260, or Rs. 7,208 more, chiefly on account of the higher sum given by him for Sirkár G’horág’khá†. Vth Report, p. 238.

† “The ryots (*ra’iyyat*) of Bengal are obedient and ready to pay taxes. During eight months of the year they pay the required sums by instalments. They personally bring the money in rupees and goldmuhurs to the appointed place. Payment in kind is not usual. Grain is always cheap. The people do not object to a survey of the lands, and the amount of the land tax is settled by the collector and the ryot (*nasag*). His Majesty, from kindness, has not altered this system.” *Áin i Akbarí*.

‡ Imposts as fees on the renewal of annual leases of zamindárs (*khácnawísf*); *nazránahs*; fees for remission of imperial revenue; *zar i mahaut*, or impost levied for the maintenance of the Nawáb’s elephants; and many more.

changes that took place; these I must necessarily reserve for the second volume of my *Āin* translation. But I shall now attempt to trace the frontiers of Bengal under the Muhammadan rule as far as existing historical sources allow us to do.

### The Frontiers of Muhammadan Bengal.

Abulfazl estimates the breadth of Bengal from Garhī to Chātgaon at four hundred *kos*. From north to south, the longest line was from Koch Bihār to Chittúā in Sirkār Medinípúr. "The zamindárs are mostly Káyasths." Not a word is said on the strength of the Muhammadan population, or the progress of Islām—comparative statistics were not thought of in his age. The remark made by old English travellers that the inhabitants of the islands and the coast of south-eastern Bengal were chiefly Muhammadans, and the uncertain legend regarding the introduction, in the beginning of the 16th century, of Islamitic rites into Chātgaon by Nuṣrat Sháh are the only allusions that I have seen on the subject. Neither history nor legends allude to the conversions among the semi-aboriginal rural population, that must on a large scale have taken place during the reigns of the independent kings of Bengal, chiefly, no doubt, through the exertions of the numerous Afghlán Jagirdárs.

The military and naval power of the country is fixed at 23,330 horse, 4,260 guns, 1,170 elephants, and 4,400 boats. In Nawáb Ja'far's rent-roll, however, the strength of the naval establishment (*nawára*) consisted of 768 armed cruisers and boats, which were principally stationed at Dháká, to guard the coast against the Mags and foreign pirates; and the number of sailors included 923 Firingís, chiefly employed as gunners. The annual charges of the navy, including construction and repairs, was fixed at Rs. 843,452, which was levied under the name of '*amalah i nawára*' from parganahs in South-Eastern Bengal. The same rent-roll mentions that the garrisons along the whole eastern frontier from Chātgaon to Rángamáti on the Brahmaputra consisted of 8,112 men (*ahshám*), who cost 359,180, Rs. per annum.

Of the roads in Bengal we have no information prior to Van den Broucke's map (1660) in Valentyn's work. He marks (1) a principal road passing over Patna, Munger, and Rájmahall to Sútí, where the Bhagirathí leaves the Ganges. From here a branch went to Moxudabath (Murshidábád), Plassi (Palásí), and Hagdia,\* crossed the Bhagirathí for Gasiapoor,

\* Hagdia is Agardíp. Van den Broucke's map gives here an interesting particular. He marks Hagdia on the *left* bank of the river, and Gasiapoor (Ghásípur) on the *right* bank. Both places lie now far from the right bank, with only a small k'hál between them, and a large semi-circular lake round both. The lake, as else-

and passed on to Bardwán, Medinípur, Bhadrak (wrongly marked on the right bank of the Baitarani), and Kaṭak. The other branch went from Sútí along the right bank of the Podda to Fathábád, from where it passed on to Dháká. These two branches are marked as principal roads (*sháhí rastah*). (2) A road from Bardwán to Baccaresoor (Baklesar in Bírghúm, famous for its hot springs, within the Marátha Intrenchment of Nágór), and from there to Qásimbázár and the banks of the Ganges, and across the river to 'Hasiaarhati.' This is Hajrahattí, on the left bank of the Podda, now also a ferry place, near the entrance of the Burul River, below Rámpúr Boáliá, and seems to be the Qázíhattí (Beng. Kájierhattí), which Abulfazl mentions in the *Áin*. From Hasiaarhati the road passed to a place called Harwa, and from there to Ceerpoor Mirts, *i. e.* Sherpúr Murchah, on the Karataya, and passing over Tessiadin (Chandíján, north of Sherpúr, ?) to Gorregaut (G'horág'hát) and Bareithela (Baritalá) on the Brahmaputra, which will be mentioned below as a frontier town. (3) A road from Bardwán over Salimábád, Hugli, Jessore, Bosnah, Fathábád, across the river to Sjatterapoer,\* Casisella, and Idrákpúr, opposite the confluence of the Lak'hiá and the Dalásari, near Ballál Sen's palace. (4) A road from Dháká, across the Dalásari to Piaarpoer and Bedlia, which latter place is marked at the point where the Dalásari leaves the Jamuná, and from there to Sasiadpoor (Sháhzádpúr, in Pabnah), and Handiael (Hariál).

### *The Western Frontier.*

In the north-west, the frontier of Bengal extended but little beyond the Kosí River; but under some of the early Muhammadan governors and the independent kings, the Bengal empire included all upper Bihar north of the Ganges as far as Sárán. Of Ilyás Sháh, for example, it is asserted that he was the founder of Hájípúr, opposite Paṭna, on the Ghandak, although Fírúz Sháh, on his return from Bengal, appointed for the first time Imperial collectors in Tirhut. Sikandar Sháh's coins, again, have been found far west of the Kúsi.

Southern Bihár only belonged to Bengal from the time of the conquest by Bakhtiyár Khiljí to about 730 A. H. (A. D. 1330), when Muhammad Tughluq annexed it to Dihlí. From 800 again (A. D. 1397), the whole of Bihár belonged to the kingdom of Jaunpúr. Under Buhlúl again, Daryá Khán Loháni was governor of Bihár; and under Ibráhím, Daryá's son Bahádur Khán assumed independence in Bihár under the title of Sháh Muham-

where in Bengal, is the old bed of the river, which now follows the shorter route along the chord of the loop. This change, therefore, took place after 1660.

Thus also Nadiyá lies now on the right bank of the river; but west of the town, there is still the old channel, which goes by the name of Ganga Bhárat.

\* Roussel gives Satrapur; but modern maps give no such name.

mad.\* It is not clear how far these Afghán chiefs depended on Husain Sháh of Bengal, whom inscriptions represent firmly established in 903 at Munger, while other inscriptions from Bouhárá and Cheran (near Sárán) would lead us to conclude that the whole of Upper Bihár and the western portions of Southern Bihár belonged to him in A. H. 908 and 909 (A. D. 1502, 1503). On the other hand, we hear in history of the cession by Husain Sháh of Bihár, Sárán, and Tirhut, and of the reconquest of these lands by Nuçrat Sháh, who, if he could not hold them, assisted the Afgháns against Bábur. Nuçrat Sháh seems even to have passed beyond the Ghandak; for a mosque near Sikandarpúr, on the right bank of the river, in District A'zamgarh, was built during his reign.

South of the Ganges, the western frontier is better defined. Fort Taliágarh, or Garhí,† near K'halgáon (Colgong) on the Ganges, was looked upon as the entrance, or key, to Bengal—a position which Muhammadan historians compare with that of Fort Sahwán on the Indus, the key of Sindh. From Garhí the frontier passed along the Ganges to the south of Ág-Mahall (Ráj Mahall), when it again turned westward to north-western Bírghúm, passing along the boundary of the modern Santál Parganahs to the confluence of the Barákar and the Damúdar, from where it went along the left bank of the Damúdar to the neighbourhood of the town of Bardwán. From here the frontier took again a westerly direction, and passed along the north-western and western boundaries of the modern Húglí and Habrah (Howrah) Districts down to Mandalg'hát, where the Rúpnaráyan flows into the Húglí River.

This boundary, it will be seen, excludes the whole of the Santál Parganahs from the south of K'halgáon to the Barákar, Pachet,‡ and the territory of the Rájahs of Bishupúr (Bankurá). In vain do we look in Santalia for Muhammadan names of villages and towns; and though there can be no doubt that the Muhammadan kings of Bengal tried to hold parts of the hills by establishing thánahs and appointing jāgírholders, no permanent settlements were formed. One of the most westerly thánahs in southern Santalia was Sarhat, N. W. of Shiúrí (Soory) in Bírghúm, which is mentioned in Tribení inscriptions;§ whilst the settlement of Pathán

\* Called in many MSS. Mahmúd.

† It is not known which king built the fort; but it may be accidental that the name does not occur in the Tabaqát i Náçirí and in Baraní. At K'halgáon, Mahmúd Sháh III., the last independent king of Bengal, died in 945 (1538 A. D.).

‡ Regarding the invasion of Chutiá Nágpúr by the Muhammadans, vide J. A. S. B., 1871, Part I, p. 111.

§ Sarhat, spelt on inscriptions Sirhat, lies on the left bank of the Ajai River. Its name on modern maps is corrupted to Saruth. Rennell has Sarhaut. Outside the place, the survey maps mark two old forts. A little to the south of it, a village of the name of Lukrakhonda is marked. Rennell on his map of Bírghúm (Bengal Atlas,

jágirdárs, before and after the time of Sher Sháh, as a standing militia against the inroads of the tribes of Jhárk'hand (Chutiá Nágpúr), led to the formation of the great Muhammadan zamindári of Bírghúm, which gave the E. I. Company some trouble.

In Todar Mall's rent-roll the following Mahalls are mentioned along this portion of the western frontier of Bengal—Ág' Mahall (Rájmahall), Kankjol, Kunwar Partáb, Molesar,\* in Sirkár Audambar or Tánḍah; Bharkúndah, Akbarsháhi, Kaṭangah, in Sharifábád (Bírghúm); Nágor, Sainbhúm, Shergarh (Rániganj), Champánagarí (N. W. of the town of Bardwán), Madáran (Jahánábád and Chandrakoná, west of Húgli), Chittúá (District Medinipur), and Mandalg'hát, at the mouth of the Rúpnáráyan, all belonging to Sirkár Madáran.

The name of the frontier mahall of Bharkúndah in Bírghúm, mentioned above, seems to have been formerly extended to the whole of Bírghúm and the Santál Pargana's. In this extended sense, it is used in the *Tárikh i Dáúdli*,† on De Barros' map of Bengal, and on Blaeu's map of India (*vide* Pl. IV). In the latter, it is only given as 'Barcunda,' but in the former as 'Reino de Barcunda,' extending from Ferrandus (a corruption of Bardwán) to Gorij, in which we recognize Garhí, the 'key of Bengal.' West of Barcunda, De Blaeu and De Barros give 'Patanes,' *i. e.* the Patháns, the military and semi-independent landholders of the western Bengal frontier. On the Ganges, both maps shew Gouro (Gaur), and opposite to it, 'Para', for which De Barros gives 'Rara.'‡ Both spellings may be mistakes for Tara, *i. e.* Tánḍah, which should of course be on the other side of the river; or 'Rara' stands for the old Hindú division of Rádha, which there commences. South of 'Ferrandus,' the old maps give 'Mandaram' and 'Cospetir,' which latter name is wrongly placed on Blaeu's map north of Mandaram, whilst De Barros has it correctly west of it. In Mandaram we recognize Madáran, the chief town of Sirkár Madáran, a name which even now-a-days is pronounced by the peasants Mandáran.§ 'Cospetir,' or De

No II.) places a 'Lacaracoond,' in conspicuous letters, south of Nágor; but modern maps give no such locality. Could this be the Lak'hnúr of the Tabaqat?

\* *Sábhiq* (*i. e.* former) Molesar and Darín Molesar. The former name is wrong spelt in the Indian Atlas (Sheet 113) Sarik Molissor.

† Dowson, Elliot's History of India, IV., pp. 360, 361.

‡ South of Para or Rara, Blaeu and De Barros give a place of the name of Moulanadangur; and below Gouro, Patana or Patona, and Meneitipur, which I have not identified.

§ I have identified Madáran with Bhitargarh in Jahánábád, in the north-western corner of Húgli District. *Vide* Proceedings, As. Socy. Bengal, for April, 1870, where the legends of the place are given.

As the name of Jahánábád occurs in the Akbarnámah, it has no connexion with Sháhjahán's name, but refers more likely to one of the numerous Khán Jaháns of the Pathán rule.

Barros' 'Reino Cospetir,' a name that puzzled me long, is clearly 'the kingdom of the Gajpatí,' or Lord of elephants, the title of the kings of Orísá, the final *r* being nothing but the ending of the Bangálí genitive. Sirkár Madáran was indeed the frontier of Orísá; but if the legends of the Húglí District speak of the Gajpatís having once extended their kingdom to the Ganges (Húglí River), it must have been prior to the time when Sâtgaón became the seat of Muhammadan governors.

It is remarkable that, among the names of the jungly and hilly frontier districts, we find so many ending in *bhúm*. Thus we have Birbhúm;\* Sainbhúm, along the left bank of the Ajai, in Birbhúm district; Sik'harbhúm or Shergarh, the mahall to which Rániganj belongs; Gopíbhúm, along the right bank of the Ajai; Bámanbhúm or Bráhmaṇbhúm, in northern Medinipur District; Mánbhúm, Baráhbhúm, Dhalbhúm, Singbhúm, in Chutiá Nágpúr; Túnbhúm, in southern Parúliá; Malbhúm, the frontier of Bardwán and Medinipur Districts; Bhanjibhúm, with the town of Medinipur,† &c. Similarly, the frontier district between Rangpúr and the Brahmáputra, comprising Mahalls Bhitaband and Báhírband, is called in Shujá's rent-roll 'Bangálbhúm.'

I mentioned Mahall Mandalg'hát at the confluence of the Rúpnaráyan and the Húglí as the south-western frontier of Bengal. The Districts of Medinipur and Hijlí (south-east of Medinipur) were therefore excluded. They belonged to the kingdom of Orísá till A. H. 975, or A. D. 1567,‡ when Suláimán, king of Bengal, and his general Kálá Pahár defeated Mukund Deb, the last Gajpatí. Even after the Afghán conquest, Medinipur and Hijlí continued to belong to the province of Orísá, when Khán Jahán Afghán was appointed by Dáúd Sháh governor of Orísá, Qutlú Khán Lohání being made governor of Púrí. On the 20th Zí Qa'dah, 982, (3rd March, 1575) Mun'im KhánKhánán, Akbar's general, defeated Dáúd Sháh at Tukarói or Mughulmári, north of Jalesar, and in the peace of Kaṭak, in the beginning of 983, Bihár and Bengal were ceded. In 984, Dáúd again invaded Lower Bengal, but was defeated and killed on the 15th Rabi' II, 984, near Ág Mahall by Husain Qulí Khán Jahán, when Bengal was again annexed to Dihlí, and the Afgháns withdrew to Orísá. Then the Bengal Military Revolt broke out, and Orísá was invaded, in A. H. 1000, (A. D. 1592) by Mán Singh, when the country was finally annexed to the Dihlí empire. Hence Medinipur and Hijlí appear

\* The name occurs in the *Kín* as a Mahall; but as name for a large division it does not seem to have been used before the 18th century.

† The *Kín* also mentions a mahall Bhowáibhúm under Sirkár Madáran; modern maps do not give this name.

‡ So according to the *Akbarnámah*. Stirling fixes an earlier date; but Suláimán reigned from A. H. 975 to 980. Besides, Akbar sent in 972-973 ambassadors to Mukund Deb.

10. *Sirkár Chátgáon* (Chittagong), never properly annexed before the reign of Aurangzib. 7 mahalls; revenue, Rs. 285,607.

*B. Sirkárs in the Delta of the Ganges.*

11. *Sirkár Sât-gáon*. A small portion only, the land between the Húglí and the Saraswatí, lay west of the Húglí, whilst the bulk of the *Sirkár* comprised the modern district of the 24-Parganahs to the Kabadak, western Nadiyá, south-western Murshidábád, and extended in the south to Hatiágárh below Diamond Harbour. To this *Sirkár* belonged Mahall Kalkattá (Calcutta) which, together with two other mauza's, paid, in 1582, a land revenue of Rs. 23,905. 53 mahalls; revenue, Rs. 418,118.

12. *Sirkár Mahmúdábád*, so called after one of the three Mahmúd Sháhs of Bengal, and comprising northern Nadiyá, northern Jessore, and western Farídpúr. 88 mahalls; revenue, Rs. 290,256.

13. *Sirkár Khalífatábád*, or southern Jessore and western Bâqirganj. The *Sirkár* is called after Khalífatábád, which was the name of the small Hawelí-parganah near Bâgherhát (*vide* below). The largest mahall of this *Sirkár* was Jesar (Jessore), or Rasúlpúr; and among others, we find here the Mahalls Múndagáchha and Malikpúr, which the Khán i A'zam, when governor of Bengal under Akbar (Ain translation, p. 326), is said to have given to Bhabeshwar Rái, the ancestor of the present Rájahs of Jesar. The name of Jesar, therefore, occurs as early in 1582; hence Van den Broucke's map (1660) also gives it conspicuously as 'Jessore.\*' 35 mahalls; revenue, Rs. 135,053.

14. *Sirkár Fathábád*, so called after Fath Sháh, king of Bengal, comprising a small portion of Jessore, the whole of Farídpúr, southern Bâqirganj, portions of Dháká district, and the Islands of Dak'hin Shahbázpúr, Sondíp, and Sidhú, at the mouth of the Megna. The town of Farídpúr lies in the Hawelí Parganah of Fathábád. 3 mahalls, revenue, Rs. 199,239.

15. *Sirkár Baklá*,† or Ismá'íl-púr, north-east of the preceding, comprising portions of Bâqirganj and Dháká districts. It is the *Bacala* of old maps. 4 mahalls; revenue, Rs. 178,756.

*C. Sirkárs South of the Ganges and West of the Bhagirathi (Húglí).*

16. *Sirkár Audambar*, or Tánqah, comprising the greater portion of Murshidábád district, with portions of Bírghúm. The name Audambar occurs also in other parts of India, *e. g.* in Kachh.‡ Tánqah did not long enjoy the position of capital: Sher Sháh already had made plans to remove it

\* *Vide*, however, Westland, Jessore Report, p. 29.

† The author of the *Siyarul Mutaakkharín* calls it Hoglá (هوجل), from the Bangálí word *hoglá*, which signifies marsh reed—a name which no doubt explains the name of Húglí; but he strangely confounds *Sirkár Baklá* with *Sirkár Sât-gáon* (Húglí).

‡ *Vide* Cunningham, *Ancient Geography of India*, I, p. 248.



to Ag Mahall on the opposite bank. But this was only carried out by Rājāh Mān Singh, who changed the name of Ag Mahall to Raj Mahall, and subsequently to Akbarnagar. The same Sirkār became again in later times under Prince Shujā' the seat of government, and later still under Nawāb Ja'far Murshīd Qulī Khān, who changed the name of the old town of Makhṣūcābād,\* the *Muzabad* or *Muxadabad* of old maps, to Murshid-ābād. 52 mahalls; revenue, Rs. 601,985. The Haft Iqlīm gives its revenue at Rs. 597,570.

17. Sirkār Sh aríf á b á d, south of the preceding, comprising the remaining portions of Bīrbhūm, and a large portion of Bardwān district, together with the town of Bardwān† itself. Mahalls Bárbak Singh and Fath Singh, so called after the Bengal kings Bárbak Shāh and Fath Shāh, and Sherpūr 'Atāf, where Mān Singh defeated the Afghāns (Ain translation, p. 341) also belonged to this Sirkār. 26 mahalls; revenue, Rs. 562,218.

18. Sirkār Sulaimánábád, a straggling Sirkār, which comprised a few southern parganahs in the modern districts of Nadiyá, Bardwān, and the whole north of Húgli district. This Sirkār was so called after Sulaimān Shah of Bengal, who also called several parganahs after himself in Murshid-ābād, Jessore, and Bāqirganj districts; but whether the name was too long, or was purposely changed after Akbar's conquest of Bengal in honor of Prince Salīm (Jahāngír), it only occurs now-a-days in the form 'Salīmābād.' The chief town of the Sirkār was Salīmābād [Sulaimānābād], on the left bank of the Damúdar, south-east of the town of Bardwān. It is marked as 'Silimath' on Van den Broucke's map. Olá (the old name of Bīrnagar) in Nadiyá, known from the Srimanta legend, and Panduah, on the E. I. Railway, with its Buddhist ruins and ancient mosques, also belong to this Sirkār. 31 mahalls; revenue, Rs. 410,749.

19. Sirkār Madáran, extending in a semicircle from Nāgor in Western Bīrbhūm over Rāniganj along the Damúdar to above Bardwān, and from there over K'hand Ghosh, Jahānābād, Chandrakoná (Western Húgli District) to Mandalghāt, at the mouth of the Rúpnaráyan River. 16 mahalls; revenue, Rs. 235,085.

Thus the above nineteen Sirkárs, which made up Bengal in 1582, paid a revenue on khalsa lands, inclusive of a few duties on salt, *hāfs*, and

\* The Akbar-námah mentions a Makhṣūc Khān, brother of Sa'id Khān; vide my Ain translation, p. 388. Makhṣūc Khān served in Bengal and Bihār, and his brother Sa'id Khān was for some time governor of Bengal.

† The Muhammadan pronunciation of the Bangálí *Bordomán*. The Haft Iqlīm mentions an extraordinary custom that obtained in this Sirkār. "Feminae hujus provinciae instrumentum quoddam fictile penis instar in vulvam et in anum inferunt, ut sordes removeant. The old kings have in vain tried to break them off this habit."

Regarding the Muhammadan antiquities of Bardwān, vide Journal, As. Bengal, for 1871, Pt. I, p. 254.

fisheries, of 253,482,106 *dáms*, or Rs. 6,337,052.\* According to Grant, the value of the *jágir* lands was fixed at Rs. 4,348,892, so that we have, in 1582, A. D., as total revenue of Bengal, in its then circumscribed limits, the sum of Rs. 10,685,944. This was levied from the *ryots* in specie† as the equivalent of the *rub*, or fourth share, of the entire produce of the land, claimed by the sovereign as despotic proprietary lord of the soil.

This rent-roll remained in force during the reign of Jahángír. The remittances from Bengal to Dihlí were, it is true, not very regular, nor up to the sums levied, so much so that Jahángír appointed, in the end of his reign, Fidái Khán, governor of Bengal, merely because he promised to send regularly one million of rupees to court. Under Sháhjahán, the boundaries of Bengal were extended in the South-West, Medinipur and Hijli having been attached to Bengal, and in the East and North-East by conquests in Tiparah and Koch Hájo; and when Prince Shujá' was made governor, he made, shortly before 1658, a new rent-roll, which shewed 34 Sirkárs and 1350 Mahalls, and a total of revenue, on khalsa and *jágir* lands, of Rs. 13,115,907. Shujá's rent-roll remained in force till 1722, an addition having been made after the conquest of Chátgáon. In that year, Nawáb Ja'far Khán (Murshid Qulí Khán) issued his *Kámil Jama' Tûmári*, or 'Perfect Rent-roll,' in which Bengal was divided into 34 Sirkárs, forming 13 Chaklahs, and sub-divided into 1660 Parganahs, with a revenue of Rs. 14,288,186.

It was, however, only after the rule of Nawáb Ja'far Khán that the *Abwab* revenue‡ gradually appeared in the books. Though vast sums had been levied on this head, they had been looked upon as private emoluments of office. As early as in the tenure of Shujá' Khán, Nawáb Ja'far's successor, we find the *Abwabs* entered as yielding Rs. 2,172,952, and they rapidly increased under 'Alí Virdí Khán and Qásim Khán, so that, when the E. I. Company in 1765 acquired the Diwání, the *net* amount of all revenue collected by authority in Bengal was Rs. 25,624,223.

It is not my intention to enter here further in the historical portion of the revenue question of Bengal, nor shall I minutely describe the Sirkárs and the Mahalls or detail the historical and geographical

\* Grant's total is Rs. 6,344,260, or Rs. 7,208 more, chiefly on account of the higher sum given by him for Sirkár G'horág'hát. Vth Report, p. 238.

† "The *ryots* (*ra'iyyat*) of Bengal are obedient and ready to pay taxes. During eight months of the year they pay the required sums by instalments. They personally bring the money in rupees and goldmuhurs to the appointed place. Payment in kind is not usual. Grain is always cheap. The people do not object to a survey of the lands, and the amount of the land tax is settled by the collector and the *ryot* (*nasaq*). His Majesty, from kindness, has not altered this system." *Ain-i-Akbari*.

‡ Imposts or fees on the renewal of annual leases of zamindárs (*kháqawáfs*); *nazránahs*; fees for remission of imperial revenue; *zar-i-mahant*, or imposts levied for the maintenance of the Nawáb's elephants; and many more.

changes that took place; these I must necessarily reserve for the second volume of my *Xin* translation. But I shall now attempt to trace the frontiers of Bengal under the Muhammadan rule as far as existing historical sources allow us to do.

### The Frontiers of Muhammadan Bengal.

Abulfazl estimates the breadth of Bengal from Garhi to Chátgáon at four hundred *kos*. From north to south, the longest line was from Koch Bihár to Chittúá in Sirkár Medinípúr. "The zamindárs are mostly Káyasths." Not a word is said on the strength of the Muhammadan population, or the progress of Islám—comparative statistics were not thought of in his age. The remark made by old English travellers that the inhabitants of the islands and the coast of south-eastern Bengal were chiefly Muhammadans, and the uncertain legend regarding the introduction, in the beginning of the 16th century, of Islamitic rites into Chátgáon by Nuçrat Sháh are the only allusions that I have seen on the subject. Neither history nor legends allude to the conversions among the semi-aboriginal rural population, that must on a large scale have taken place during the reigns of the independent kings of Bengal, chiefly, no doubt, through the exertions of the numerous Afghán Jágirdárs.

The military and naval power of the country is fixed at 23,330 horse, 4,260 guns, 1,170 elephants, and 4,400 boats. In Nawáb Ja'far's rent-roll, however, the strength of the naval establishment (*nawára*) consisted of 768 armed cruisers and boats, which were principally stationed at Dháká, to guard the coast against the Mags and foreign pirates; and the number of sailors included 923 Firingis, chiefly employed as gunners. The annual charges of the navy, including construction and repairs, was fixed at Rs. 843,452, which was levied under the name of '*amalak i nawára*' from parganahs in South-Eastern Bengal. The same rent-roll mentions that the garrisons along the whole eastern frontier from Chátgáon to Rángamáti on the Brahmaputra consisted of 8,112 men (*ahshám*), who cost 359,180, Rs. per annum.

Of the roads in Bengal we have no information prior to Van den Broucke's map (1660) in Valentyn's work. He marks (1) a principal road passing over Patna, Munger, and Rájmahall to Sútí, where the Bhagirathí leaves the Ganges. From here a branch went to Moxudabath (Murshidábád), Plassi (Palásí), and Hagdia,\* crossed the Bhagirathí for Gasiapoor,

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### *The Western Frontier.*

In the north-west, the frontier of Bengal extended but little beyond the Kosi River; but under some of the early Muhammadan governors and the independent kings, the Bengal empire included all upper Bihar north of the Ganges as far as Sáran. Of Ilyás Sháh, for example, it is asserted that he was the founder of Hájípur, opposite Paṭna, on the Ghandak, although Fírúz Sháh, on his return from Bengal, appointed for the first time Imperial collectors in Tírhut. Sikandar Sháh's coins, again, have been found far west of the Kúsi.

Southern Bihár only belonged to Bengal from the time of the conquest by Bakhtiyár Khiljí to about 730 A. H. (A. D. 1330), when Muhammad Tughluq annexed it to Dihlí. From 800 again (A. D. 1397), the whole of Bihár belonged to the kingdom of Jaunpúr. Under Buhlúl again, Daryá Khán Lohání was governor of Bihár; and under Ibráhím, Daryá's son Bahádur Khán assumed independence in Bihár under the title of Sháh Muham-

where in Bengal, is the old bed of the river, which now follows the shorter route along the chord of the loop. This change, therefore, took place after 1660.

Thus also Nadiyá lies now on the right bank of the river; but west of the town, there is still the old channel, which goes by the name of Ganga Bhárat.

\* Rennel gives Satrapur; but modern maps give no such name.

mad.\* It is not clear how far these Afghán chiefs depended on Husain Sháh of Bengal, whom inscriptions represent firmly established in 903 at Munger, while other inscriptions from Bonhárá and Cheran (near Sárán) would lead us to conclude that the whole of Upper Bihár and the western portions of Southern Bihár belonged to him in A. H. 908 and 909 (A. D. 1502, 1503). On the other hand, we hear in history of the cession by Husain Sháh of Bihár, Sárán, and Tirhut, and of the reconquest of these lands by Nuçrat Sháh, who, if he could not hold them, assisted the Afgháns against Bábar. Nuçrat Sháh seems even to have passed beyond the Ghandak; for a mosque near Sikandarpúr, on the right bank of the river, in District A'zamgarh, was built during his reign.

South of the Ganges, the western frontier is better defined. Fort Taliágarh, or Garhí,† near K'halgáon (Colgong) on the Ganges, was looked upon as the entrance, or key, to Bengal—a position which Muhammadan historians compare with that of Fort Sahwán on the Indus, the key of Sindh. From Garhí the frontier passed along the Ganges to the south of Ág-Mahall (Ráj Mahall), when it again turned westward to north-western Bírghúm, passing along the boundary of the modern Santál Parganahs to the confluence of the Barákar and the Damúdar, from where it went along the left bank of the Damúdar to the neighbourhood of the town of Bardwán. From here the frontier took again a westerly direction, and passed along the north-western and western boundaries of the modern Húglí and Habrah (Howrah) Districts down to Mandalg'hát, where the Rúpnaráyan flows into the Húglí River.

This boundary, it will be seen, excludes the whole of the Santál Parganahs from the south of K'halgáon to the Barákar, Pachet,‡ and the territory of the Rájahs of Bishnpúr (Bankurá). In vain do we look in Santalia for Muhammadan names of villages and towns; and though there can be no doubt that the Muhammadan kings of Bengal tried to hold parts of the hills by establishing thánahs and appointing jagírhólders, no permanent settlements were formed. One of the most westerly thánahs in southern Santalia was Sarhat, N. W. of Shiúrí (Soory) in Bírghúm, which is mentioned in Tribení inscriptions;§ whilst the settlement of Pathán

\* Called in many MSS. Mahmúd.

† It is not known which king built the fort; but it may be accidental that the name does not occur in the *Tabaqát i Náçiri* and in *Baraní*. At K'halgáon, Mahmúd Sháh III., the last independent king of Bengal, died in 945 (1538 A. D.).

‡ Regarding the invasion of Chutiá Nágpúr by the Muhammadans, *vide* J. A. S. B., 1871, Part I, p. 111.

§ Sarhat, spelt on inscriptions Sirhat, lies on the left bank of the Ajai River. Its name on modern maps is corrupted to Saruth. Rennell has Sarhaut. Outside the place, the survey maps mark two old forts. A little to the south of it, a village of the name of Lukrakhonda is marked. Rennell on his map of Bírghúm (Bengal Atlas,

jágirdárs, before and after the time of Sher Sháh, as a standing militia against the inroads of the tribes of Jhárk'hand (Chutiá Nágpúr), led to the formation of the great Muhammadan zamíndári of Bírghúm, which gave the E. I. Company some trouble.

In Todar Mall's rent-roll the following Mahalls are mentioned along this portion of the western frontier of Bengal—Ag. Mahall (Rájmahall), Kámkjol, Kunwar Partáb, Molesar,\* in Sirkár Audambar or Tánḍah; Bharkúndah, Akbarsháhi, Kaṭangah, in Sharifábád (Bírghúm); Nágor, Sainbhúm, Shergarh (Rániganj), Champánagari (N. W. of the town of Bardwán), Madáran (Jahánábád and Chandrakouá, west of Húgli), Chittúá (District Medinípúr), and Mandalghát, at the mouth of the Rúpnaráyan, all belonging to Sirkár Madáran.

The name of the frontier mahall of Bharkúndah in Bírghúm, mentioned above, seems to have been formerly extended to the whole of Bírghúm and the Santál Parganahs. In this extended sense, it is used in the *Tárikh i Dáulí*,† on De Barros' map of Bengal, and on Blæv's map of India (*vide* Pl. IV). In the latter, it is only given as 'Barcunda,' but in the former as 'Reino de Barcunda,' extending from Ferrandus (a corruption of Bardwán) to Gorij, in which we recognize Garhí, the 'key of Bengal.' West of Barcunda, De Blæv and De Barros give 'Patanes,' *i. e.* the Patháns, the military and semi-independent landholders of the western Bengal frontier. On the Ganges, both maps shew Gouro (Gaur), and opposite to it, 'Para', for which De Barros gives 'Rara.'‡ Both spellings may be mistakes for Tara, *i. e.* Tánḍah, which should of course be on the other side of the river; or 'Rara' stands for the old Hindú division of Ráḍha, which there commences. South of 'Ferrandus,' the old maps give 'Mandaram' and 'Cospetir,' which latter name is wrongly placed on Blæv's map north of Mandaram, whilst De Barros has it correctly west of it. In Mandaram we recognize Madáran, the chief town of Sirkar Madáran, a name which even now-a-days is pronounced by the peasants Mandáran.§ 'Cospetir,' or De

No II.) places a 'Lacarcound,' in conspicuous letters, south of Nágor; but modern maps give no such locality. Could this be the Lak'húr of the Tabaqat?

\* *Sábiq* (*i. e.* former) Molesar and Darín Molesar. The former name is wrong spelt in the Indian Atlas (Sheet 113) Sarik Molissor.

† Dowson, *Elliot's History of India*, IV., pp. 360, 361.

‡ South of Para or Rara, Blæv and De Barros give a place of the name of Moulnadangur; and below Gouro, Patana or Patona, and Meneitipur, which I have not identified.

§ I have identified Madáran with Bhitargarh in Jahánábád, in the north-western corner of Húgli District. *Vide* Proceedings, As. Socy. Bengal, for April, 1870, where the legends of the place are given.

As the name of Jahánábád occurs in the Akbarnámah, it has no connexion with Sháhjahán's name, but refers more likely to one of the numerous Khán Jaháns of the Pathán rule.

Barros' 'Reino Cospetir,' a name that puzzled me long, is clearly 'the kingdom of the Gajpatí,' or Lord of elephants, the title of the kings of Orísá, the final *r* being nothing but the ending of the Bangálí genitive. Sirkár Madáran was indeed the frontier of Orísá; but if the legends of the Húglí District speak of the Gajpatís having once extended their kingdom to the Ganges (Húglí River), it must have been prior to the time when Sâtgaon became the seat of Muhammadan governors.

It is remarkable that among the names of the jungly and hilly frontier districts, we find so many ending in *bhúm*. Thus we have Birbhúm;\* Sainbhúm, along the left bank of the Ajai, in Bírbbhúm district; Sik'harbhúm or Shergarh, the mahall to which Rániganj belongs; Gopíbhúm, along the right bank of the Ajai; Bámanbhúm or Brámanbhúm, in northern Medinípúr District; Mánbhúm, Barábhúm, Dhalbhúm, Singbhúm, in Chutiá Nágpúr; Túnbhúm, in southern Parúliá; Malbhúm, the frontier of Bardwán and Medinípúr Districts; Bhanjibhúm, with the town of Medinípúr,† &c. Similarly, the frontier district between Rangpúr and the Brahmaputra, comprising Mahalls Bhitaband and Báhírband, is called in Shujá's rent-roll 'Bangálbhúm.'

I mentioned Mahall Mandalg'hát at the confluence of the Rúpnaráyan and the Húglí as the south-western frontier of Bengal. The Districts of Medinípúr and Hijlí (south-east of Medinípúr) were therefore excluded. They belonged to the kingdom of Orísá till A. H. 975, or A. D. 1567,‡ when Sulaimán, king of Bengal, and his general Kálá Pahár defeated Mukund Deb, the last Gajpatí. Even after the Afghán conquest, Medinípúr and Hijlí continued to belong to the province of Orísá, when Khán Jahán Afghán was appointed by Dáúd Sháh governor of Orísá, Qutlú Khán Lohání being made governor of Púrí. On the 20th Zí Qa'dah, 982, (3rd March, 1575) Mun'im KhánKhánán, Akbar's general, defeated Dáúd Sháh at Tukarói or Mughulmárá, north of Jalesar, and in the peace of Kaṭak, in the beginning of 983, Bihár and Bengal were ceded. In 984, Dáúd again invaded Lower Bengal, but was defeated and killed on the 15th Rabí' II, 984, near Ág Mahall by Husain Qulí Khán Jahán, when Bengal was again annexed to Dihlí, and the Afgháns withdrew to Orísá. Then the Bengal Military Revolt broke out, and Orísá was invaded, in A. H. 1000, (A. D. 1592) by Mán Singh, when the country was finally annexed to the Dihlí empire. Hence Medinípúr and Hijlí appear

\* The name occurs in the *Kín* as a Mahall; but as name for a large division it does not seem to have been used before the 18th century.

† The *Kín* also mentions a mahall Bhowálbhúm under Sirkár Madáran; modern maps do not give this name.

‡ So according to the *Akbarnámah*. Stirling fixes an earlier date; but Sulaimán reigned from A. H. 975 to 980. Besides, Akbar sent in 972-973 ambassadors to Mukund Deb.

together in Todar Mall's rent-roll as one of the 5 Sirkárs of the province of Orisá. Subsequently, Orisá had separate governors; but under Prince Shujá' their power was lessened, and the portion from Mandalg'hát, to Baleswar (Balesore) was separated from Orisá and permanently attached to Bengal.\*

Hijli (*Hidgelee, Hedjeele, Grant; Hingeli, Van den Broucke; Ingellee, Rennell; Injeele, Stewart, Marshman; Angeli, Purchas, De Laët, &c.*) appears in the *Áin* under the name of Máljhattá. According to the legends preserved in the District, the Muhammadans first attempted a settlement during the reign of Husain Sháh of Bengal, about A. D. 1505, when one Táj Khán Masnad i 'Alí and his brother Sikandar Pahlawán established themselves at the mouth of the Rasúlpúr River,† opposite Ságar Island. They conquered the whole of Hijli, which is said to have remained in the family for nearly eighty years, when it passed into the possession of a Hindú. As late as 1630 we hear of the conquest of Hijli. "Hingeli, which had for many years a chief of its own, was conquered about 1630 by the Great Mogul; but in 1660, the lawful chief of Hingeli, who from a child had been kept a prisoner, found means to escape, and with the help of his own to re-conquer his country. But he did not long enjoy it: he was in 1661 brought into Aurangzeb's power with the help of the E. I. Company [the Dutch Company], and was again imprisoned and better looked after than at first."‡

#### *The Southern Frontier.*

The southern frontier of Muhammadan Bengal was the northern outskirt of the Sundarban, which extended, generally speaking, in the same manner almost as it now does, from Hatiágarh, south of Diamond Harbour on the Húglí,

\* "Sjah Sousa had already during his time divided Hingeli from Orisa, and had put there a separate governor, and it is for this reason alone that Hingeli, which by position belongs to Orisa, has been attached to Bengal. So it is also with the governors of Ballasour and Pipeli [Pipli or Sháhbandar, now deserted, on the Subarnarekhá River], which the Great Mogul ordered once to be under the governor of Orisa and then again under the governor of Bengal, because the two places are close to the sea." F. Valentyn, Vol. V.

Van den Broucke's map of Bengal in 1660, given by Valentyn, still shews north-west of the town of Medinipúr the "Gedenktoeken," or memorial stone, (corresponding to the 'Old Tower' of modern maps) that marked the frontier between Bengal and Orisá. Grant says that the coast of Hijli and Medinipúr as far as Balesore (Baleswar) was attached to Bengal on account of the Mags and the Portuguese privateers, who were to some extent controlled by the Imperial fleet stationed at Dhaká.

† Few rivers in India have Muhammadan names. Due south of Contai the maps give a village of the name of Masnad 'Alípúr. Táj Khán's tomb is on the Rasúlpúr River.

‡ From Valentyn's work, Vol. V. The 'Klamlgírnámah says nothing about it.



to Bāgherhāt in southern Jessore and to the Haring'hātā (Horingotta), or 'Deer-shore River;' *i. e.* along the southern mahalls of Sirkārs Sātgaon and Khalifatabād. Beyond the Haring'hātā and its northern portion, called the Madhūmatī or 'honey-flowing,' the frontier comprised Sirkārs Baklá and Fathābād, the modern districts of Faridpūr and Baqirganj (north). Sirkār Fathābād included the islands of Dak'hin Shalbāzpūr and Sondip, at the mouth of the Megna. Tiparah, Bhaluah, Noak'hali, and District Chátgaon, were contested ground, of which the Rājās of Tiparah and Arakan were, at least before the 17th century, oftener masters than the Muhamnadans. It was only after the transfer of the capital from Rājmahall to Dháká, that the south-east frontier of Bengal was extended to the Phani River, which was the imperial frontier till the beginning of Aurangzib's reign, when Chátgaon was permanently conquered, assessed, and annexed to 'Cúbah Bangálah.'

Various etymologies have been proposed in explanation of the word 'Sundarban.' It has been derived from *sundar* and *ban*, 'the beautiful forest;' or from *sundarī*, a small timber tree (*Heretiera litoralis*), which is exported as fuel in vast quantities from the coast and is supposed to have been so called from its red wood. Others again have derived the word from Chandradip-ban, or Chandradip forest, from the large zamindārī of Chandradip, which occupies the south and south-east of Bāqirganj District. Or, the name has been connected with the Chandabhandas,\* an old Sundarban tribe. Grant derives it from Chandraband, 'the embankment of the moon,' which seems to have been the etymology that obtained at his time, and which has led to the spelling 'Soonderbund' adopted by Europeans.

The application of the name to the whole seacoast of southern Bengal is modern. Muhammadan historians call the coast strip from the Húglī to the Megna 'Bhátī,' or 'low land subject to the influx of the tide,' and even now-a-days this name is very generally used. The sovereignty of this district, according to the Akbarnámah and the Rājāh Pratāpāditya legend, was divided among twelve chiefs; and Col. Wilford, whatever may have been the source of his information, says that "the kings of Arakan and Comillā were constantly striving for the mastery, and assumed the title of lords of the twelve Bhūniyās,"†

The sea coast itself is marked on Van den Broucke's map in Valenty's work as 'onbekent,' or 'unknown,' consisting of numerous islands and

\* A copper plate grant in the possession of the Society, found at 'Adilpūr (Edilpore), mentions that the villages of Baguli, Bittogálá, and Udayamuna, were given, in the third year of the reign of Keshab Sen, *i. e.* in 1136 A. D., to one Jovaradeh Sarma. The grant mentions the tribe of the Chandabhandas. The reading Chandabhandas, as Bábu Pratāpachandra Ghosh informs me, is an improved reading for Chattabhatta, as the name was read by Gobind Ram; *vide* Journal, 1838, Vol. VII, p. 40.

† *As. Researches*, XIV, p. 451.

rivers, 'perycleuous' for ships, being the place where the "Jagt ter Shelling"\* founded in 1661.

In order to trace the direction of the northern outskirt of the Sundarban, as it existed some time before 1582 A. D., we have again recourse to Todar Mall's rent-roll in the *Āin*. There we find that Mahall Hatiāgarh (below Diamond Harbour) was, in 1582, the most southerly assessed mahall of Sirkār Sātgaon. The jungle boundary then passed north-east to Baridhattī and Medinīmall, north-west of Port Canning, to Bāliṇḍā and Māhihattī (Myehattee), then south again to Dhulīāpūr,† and Bhalukā to the Kabadak River. These mahalls belong to what is now called the 24-Parganahs; and Sheet 121 of the Indian Atlas of the Survey Department will shew that they lie even now-a-days very little north of the present northern limit of the Sunderban in the 24-Parganahs. Going up the Kabadak, in Jessore, we come to Āmadī,‡ to the north of which, in the immediate neighbourhood, we have Masidkoor, a corruption of Masjidkur, one of the clearances of Khān Jahān (died A. D. 1459),§ the warrior saint of Khalīfatābād or Southern Jessore, to whom the traditions of the present day point as an indefatigable establisher of Sundarban-ābādīs (clearances.) The *Āin* then gives Mahall Tālā, with Tālā on the left bank of the Kabadak as chief town and Kopilmuni|| near it, and then mahalls Sāhas, Khālīcpūr, Charūliā, Rangdiyā (wrongly called in the Indian Atlas *Sangdia*) and Salīmābād,¶ north of the modern Morrellganj at the beginning of the Haring'hātā. North-west of Morrellganj, on the Bhairab (the 'dreadful'), we have the small station of Bāgherhāt, which gives name to a Sub-Division, and in its immediate neighbourhood we come to another clearance by the patron-saint of Jessore, where his mosque and tomb stand. It is the country round about Bāgherhāt which up to the end of last century bore the name given it in the *Āin*, 'Haweli Khalīfatābād,' the 'Vicegerent's clearance.' Here, amidst the creeks and the jungles, which no horseman can approach, Nuṣrat Shah, as will be seen below, erected a mint, apparently in opposition to his father 'Alāuddīn Husain Shāh.\*\*

\* Vide Mr. Foster's article, *Journal, As. Socy. Bengal*, 1872, Part I, p. 36.

† North of Ishwarīpūr (Issuripore), the residence of Pratāpadiṭya.

‡ Marked wrongly on the Survey map Armadi. Rennell has correctly Amadi.

§ Westland, *Jessore Report*, p. 20; Gaur Dās Baisākl, *Journal, As. Soc. Bengal*, 1867, pp. 130, 131; also, *Journal*, 1872, Part I, p. 108.

|| Rash Bihārī Bose, *J. A. S. Bengal*, 1870, Part I, p. 235; Westland, *Jessore Report*, Chapt VI, and p. 286.

¶ Here also the *Āin* has the form Sulaimānābād.

\*\* It is curious that a little higher up on the Bhairab, east of Khulnā, where the Athārābānka (the 'eighteen windings') joins the Bhairab, there is an 'Alāīpūr, i. e. 'Alāuddīn's town. Were it not for the distinct statement of the *Riyāzussalāṭīn* that 'Alāuddīn, after arriving as an adventurer in Bengal, settled at a Chandpūr (a very

Thus we see that in southern Jessore also the northern limit of the Sundarban has not considerably changed since 1450 A. D.

Passing from the Haring'hātā eastward, we come to Sirkār Baklá and Fathábád. Sirkār Baklá only contained four mahalls, viz. Isná'íl-púr or Baklá; Srírámpúr; Sháhzádpúr; and 'Adilpúr, (from 'ádi' just, corrupted on the maps to Edilpore), which all belong to Bāqirganj District. Abulfazl, in speaking of the great cyclone that swept in 1583 over Baklá, says that the then zamindār of Baklá had a son of the name of Pramānand Rái. Sirkār Fathábád derives its name from the Hawelí mahall Fathábád, in which the modern station of Faridpúr lies. Yúsufpúr and Belphúli, in Jessore District; Hawelí Fathábád and Sirdiá (Sherdia), in Faridpúr; Balaúr, Telhattí, Sarail or Jalálpúr,\* Khargapúr, in both Faridpúr and Dháká; Hazratpúr, in Dháká; Rasúlpúr, in Dháká and Bāqirganj; the Islands of Sondíp and Shahbázpúr; and a few other mahalls which I have not yet identified, belong to this Sirkār. Thus we see that the greater portion of both Sirkárs lies between the Haring'hātā (Madhúmatí) and the Títuliá River, which flows between Bāqirganj District and the island of Dak'hin Shahbázpúr. At the mouth of the Títuliá we find the Don Manik Islands, one of the few still surviving geographical names of the Portuguese.† Opposite to these islands we have mahall Názirpúr, which we find on the maps of De Barros and Blaeu, placed rather far to the north. Near it, we also have 'Fatiabas',‡ the chief town of Sirkār Fathábád. The whole south and south-east of Bāqirganj District is occupied by the old Chandradip zamindári, which according to some, as we saw above, gives name to the Sundarban. On Rennell's map it is marked 'depopulated by the Mugs.'

Abulfazl says that there were in Sirkār Fathábád three classes of zamindárs, which perhaps refers to the independent Afghán, Hindú, and Portuguese chiefs. When Akbar's army, in 1574, under Mun'im Khán-Khánán invaded Bengal and Orísá, Murád Khán, one of the officers, was despatched to South-Eastern Bengal. He conquered, says the

common name) in Rádha District, i. e. west of the Húglí, I would be inclined to identify the Chandpúr near this 'Alálpúr as the place where the Husain dynasty of Bengal kings had its home, especially because Husain first obtained power in the adjacent district of Faridpúr (Fathábád), where his earliest coins are struck.

The Indian atlas (sheet No. 121) spells 'Alálpúr 'Alypore,' which blots out every historical recollection, and places it moreover wrongly on the right bank, instead of on the left, of the Athárabanká. 'Alálpúr is a flourishing place and has numerous potteries.

\* Which, like the name of the Sirkār, reminds us of *Jaldulín Fath Sháh*.

† Their names for Húglí (Porto Piqueno) and for Chátgáon (Porto Grande) are no longer known; but Sherpúr Firingí, Firingibásár, Point Palmyras, still remind us of their former importance in this part of India.

‡ Van den Broucke's map has wrongly Fathpúr.

Akbarnámah, Sirkárs Baklá and Fathábád, and settled there; but after some time, he came into collision with Mukund, the powerful Hindú zamíndár of Fathábád and Bosnah, who, in order to get rid of him, invited him to a feast and murdered him together with his sons.\* This notice helps us to explain a remark made by Grant that in Sháh Shujá's rent-roll (1658) a portion of Sundarban land had for the first time been assessed at Rs. 8,454, the ábádís being called Murádkhánah.† The name of Mukund still lives in the name of the large island 'Char Mukundia' in the Ganges opposite Farídpúr. This Mukund is the same zamíndár whom the Pádisháhnámah wrongly calls 'Mukindra of Bosnah.' His son Satrjít gave Jahángír's governors of Bengal no end of trouble, and refused to send in the customary *peskkash* or do homage at the court of Dháká. He was in secret understanding with the Rájahs of Koch Bihár and Koch Hájo, and was at last, in the reign of Sháhhahán, captured and executed at Dháká (about 1636, A. D.) One of his descendants, or successors in the zamíndarí, is the notorious Sítáram Rái of Mahmúdpúr.‡

Another Zamíndár of Fathábád is mentioned in the beginning of Sháhhahán's reign, Majlis Báyzid,—by his very name an Afghán.

The Parganahs to the south of Báqirganj are called on the maps 'Boozoorgoomedpore' and 'Arungpore,' which names are connected with Buzurg Umed Khán, son of Sháístah Khán (Aurangzib's governor of Bengal from 1664 to 1677) and with Aurangzib, 'Arang' being a corruption of Aurang. East of these two Parganahs we have Sháístah-nagar.§ These names, though they do not perhaps shew when the mahalls were reclaimed, point to the time when they came for the first time on the Imperial rent-roll.

Sirkár Fathábád, as stated above, comprised the islands of Dak'hin-Shahbázpúr, S o n d í p, &c. Of the latter island we have a short notice by Cæsar Frederick, the Venetian merchant, who travelled in Asia, as he himself says, from 1563 to 1581. He left Pegú for Chatigan (Chátgáon), "between

\* *Kín translation*, p. 374.

† Grant derives the name from *murád* and *khánah*, the 'house of desire;' but there is little doubt that we should derive it from Murád Khán, 'Murád Khán's clearance.' I do not know to what part of Báqirganj or Farídpúr the name was applied. Grant also says that Murád Khánah was sometimes called Jerádkhanah.

‡ *Journal, As. Socy. Bengal*, for 1872, Part I, pp. 58, 59. Satrjít's name occurs in the name of the town of Satrjítpúr on the Noboganga, in north-eastern Jessore, not far from Mahmúdpúr (wrongly called Mahomedpore on all modern maps) on the Madhúmatí and from the old town of Bosnah, on the Alangk'hálí [Ellenkallí] Branch. *Vide Westland's Jessore Report*, p. 32.

§ Sháístah Khán's real name is Mírzá Abú Tálíb; hence we find in Dháká District a Tálíbábád. Núr Jahán was Sháístah Khán's aunt; *vide Kín translation*, p. 612.

which two places there was much commerce in silver,"\* but "encountered a 'Touffon' (*túfún*, cyclone), which take place in the East Indies every ten or twelve years; they are such tempests and stormes, that it is a thing incredible but to those that have seen it," and was driven to Sondíp. "And when the people of the Island saw the ship, and that we were comming a-land: presently they made a place of *bazar*, or a market, with shops right over against the ship, with all manner of provision to eate, which they brought down in great abundance, and sold it so good cheape, that we were amazed at the cheapness thereof. I bought many salted kine there for the provision of the ship for half a *Larine* apiece, which *Larine*† may be 12 shillings 6 pence, being very good and fat; and 1 wilde hogges ready dressed for a *Larine*; great fat hennes for a *Bizze* [pice] a piece, which is at the most a penny: and the people told us that we were deceived the half of our money, because we bought things so deare. Also a sack of rice for a thing of nothing; and consequently all other things for humane sustenance were there in such abundance, that it is a thing incredible but to them that have seen it. This Island is called *Sondiva*, belonging to the kingdome of Bengala, distant 120 miles from Chatigan, to which place we were bound. The people are Moores, and the king a very good man of a Moore king, for if he had been a tyrant as others be, he might have robbed us of all."

Ralph Fitch also was about the same time in south-eastern Bengal. He says, "From Chatigan in Bengala I came to *Bacola* [*Sirkár Baklá*]; the king whereof is a Gentile [*Hindú*], a man very well disposed and delighted much to shoot in a gun. His country is very great and fruitful, and hath store of rice, much cotton cloth, and cloth of silke. The houses be very faire and high builded, the streetes large, the people naked except a little cloth about their waste. The women wear great store of silver hoopcs about their neckes and armes, and their legs are ringed with silver and copper, and rings made of elephants teeth.

"From *Bacola* I went to *Serrepore*,‡ which standeth upon the river Ganges, the king is called Choudery. They be all here abouts rebels against their king Zebaldim Echebar:§ for here are so many rivers and islands,

\* The export of silver from Pegú to Bengal may have supplied the Bengal mints with silver. Sir A. Phayre and Dr. T. Oldham speak of the export of gold from Burma to the Coromandel coast. Considerable quantities of silver may also have come from Asám, where silverpieces even for small fractions of a rupee were current.

† *Lári* (لاری). *Kín* translation, pp. 23, 37. It is so called from *Láristán* in Persia.

‡ *Sherpúr Firingí*, marked by Van den Broucke a little south of *Idrákpúr*, on the *Dalásari*, in Parganah *Bikrampúr*, where *Rájá Ballái Sen's* residence was. It is not given on modern maps.

§ The first *b* is a constant misprint for *l*: *Jaláluddín Akbar*.

that they flee from one to another, whereby his horsemen cannot prevail against them. Great store of cotton cloth is made here.

"*Sinnergan* [Sunnárgaon] is a towne six leagues from Serrepore, where there is the best and finest cloth made of cotton that is in all India. The chief king of all these countries is called Isacan,\* and he is chiefe of all the other kings, and is a great friend to all Christians. \*\*\* I went from Serrepore the 28th November 1582 for Pegu."

Sondip was only conquered in the end of 1666 (middle of Jumáda II., 1076), when Diláwar Khán Zamíndár submitted, though not without fighting, to Aurangzib's army that invaded Chátgáon.

I have a few words to say on the hypothesis which has often been started, that the whole of the Sundarban was once in a flourishing condition. No convincing proof has hitherto been adduced; and I believe, on physical grounds, that the supposition is impossible. The sporadic remains of tanks, gháts, and short roads, point to mere attempts at colonization. The old Portuguese and Dutch maps have also been frequently mentioned as affording testimony that the Sundarban, even up to the 16th century, was well cultivated; and the difficulty of identifying the mysterious names of the five Sundarban towns Pacaculi, Cuipitavaz, Noldy, Dipuria (or Dapara), and Tiparia, which are placed on the maps of De Barros, Blaeu, and Van den Broucke close to the coast-line, has inclined people to believe that they represent "lost towns." Now the first of these five towns, from its position, belongs to the Sundarban of the 24-Parganahs, and the second (Cuipitavaz) to that of Jessore District, whilst the remaining three lie east of it. But Pacaculi is either, as Col. Gastrell once suggested to me, a mistake for Pacacuti, *i. e.* *pakká kof'hí*,† a factory or warehouse, erected by some trading company, as we find several along the Húgli; or it stands for Penchakuli, the name of the tract opposite the present mouth of the Damúdar, or a little above the northern limit of the Sundarban. Cuipitavaz I have no hesitation to identify with Khalifatábád.‡ Van den Broucke also places it correctly south-east of Jessore. Noldy is the town and mahall of Noldi (Naldí) on the Noboganga, east of Jessore, near the Madhúmatí. Dipuria is Dapara, or Daspara, south-east of Báqirganj station, near the right bank of the Tituliá, still prominently marked on Rennell's map; and Tiparia cannot stand for anything else but the district of Tiparah, which is correctly placed north-east of Daspara.

\* 'Isá Khán. Abul Fazl calls him 'king of Bháti,' and says that twelve zamíndárs were under him. He was powerful enough to make war with Koch Bihár. *Vide Áin translation*, p. 342, note.

† Westland, Jessore Report, p. 231.

‡ Houses are either *kachhá* [mud-houses], or *pakká*, brick or stone-built.

§ The letter *f* often turns in Bangáli to *p*; hence Khalifatábád. becomes Kolspitábád. Thus Firúzpur becomes Perojeporo.

The old Portuguese and Dutch maps, therefore, prove nothing. They support the conclusion which I drew from Todar Mall's rent-roll, that in the 24-Parganahs and Jessore the northern limit of the Sundarban, omitting recent clearances, was in the fifteenth century much the same as it is now. But considerable progress must have been made in Báqirganj District, as we see from the numerous accessions, during that period, to the Imperial rent-roll.

Of other names given on old maps along the southern boundary of Bengal, we have (above Noldy) Nao Muluco (?), Buram (Borhun, in the 24-Parganahs); Maluco (Bhaluká, on the Kabadak, ?); west of them, Agrapara and Xore, (Agrapára and Dak'hineshor, north of Calcutta); and on the other side of the Huglí, Abegaca, which seems to be some Amgáchha, unless it is slightly misplaced and refers to Ambiká (Kalnah); Bernagar, which should be Barnagar, on the other side of the river below Xore; Betor (?) as on Blaeu's map, and Belor, (?) on that of De Barros. Van den Broucke's map gives, in Huglí District, Sjanabath (Jahán-ábád); Sjanderona (Chandrakoná); Cannacoel (Kánákul); Deniachali (Dhonek'háli); Caatgam (Sátgáon); Tripeni (Trípani, the Muhammadan form of Tribení); Pandua (Panquah); Sjanegger; Basanderi (the old mahall Basandhari), where Van den Broucke makes the remark, 't Bosh Sanderie alwaer *Alexandre M. gestuyt werd*, 'the bush Sanderie where Alexander the Great was stopped!'

Again, along the lower Ganges the old maps have Biearam (Bikram-púr, south of Dháká); Belhaldy; Angara (Angaria, at the confluence of the Kirtinásá and the Megna); Sornagam (Sumnargáon); Dacca; Mularangue; \* Bunder (Bandar, 'harbour'); Nazirpur, mentioned above; Bulnei or Bulnee, ?; Guacala or Gucala, perhaps a mistake for Bacala; Noorkuly or Noricoel, as Van den Broucke gives it, (Noríkol, due south of Dháká, and a little south of the right bank of the Kirtinásá); Sundiva (Sondíp Island); Jugadia (Jogdiah in Noák'háli near the Little Phani, mentioned in the *'Alamgír-námah* as an Imperial thánah, and often quoted as the seat of English and French factories in the eighteenth century); Traquetea, ?; Maua, or Moua, and Alvia, for which Van den Broucke gives Mava and Alvia, ?; Jefferi, on Van den Broucke's map, the same as Rennell's Jeffri, at the mouth of the Phani, right bank.

The coast of Arakan on the maps of De Barros and Blaeu is broken up into numerous islands as the Sundarban coast: it looks as if some of them belonged to Bengal. Thus we find Bulua and Bacala, which must refer to Bhaluah in south Tiparah and Baklá. Chokuria may be identified with Chukuria, marked on modern maps opposite Maskal Island, on the Manori

\* As this place is marked on an island south-west of Dháká, it seems to be Múlnadángi in the south of Char Mukundiá.

River, as thānah and saltgolah; but the names Irabu, Maoā (perhaps a mere repetition of the Maua given above), Santatoly, Orieton, are unknown to me.

Blaev's map (Pl. IV) and the Chart of the empire of the Grand Mogul by N. Sausson (A. D. 1652) give opposite Chatigam (Chittagong) a town, called Bengala or Bengola. Purchas (a compiler who never came to India) says in his 'Pilgrims,' "Gouro, the seat Royall, and Bengala are faire Cities. Of this, the Gulfe, sometimes called *Gangeticus*, now beareth name *Golfo di Bengala*." Rennell, in his 'Memoir,' mentions the town as being given "in some ancient maps and books of travels; but no traces of such a place exist." But he says that it is placed near the eastern branch of the Ganges, and that it may have been carried away by the river (Ganges?). Lately also, a writer in Mookerjee's Journal (Dec. 1872), Mr. H. J. Rainey, published an imaginative account of the submersion of this now lost city, which in his opinion had given name to the kingdom of Bengal. But the town is nowhere mentioned by Muhammadan historians, nor by Ibn Batūṭah, Caesar Frederick, and Ralph Fitch who were in Chātgaon, nor by De Barros and Van den Broucke. The probability, therefore, is that no such town ever existed, and that the name was put on Blaev's map from Purchas's statement; or else the name 'Bengola' is a mere corruption of what we call a 'Bungalow' (بنگلہ, *bangalāh*), or a 'Flagstaff Bungalow,' of which we find several marked on District maps of Chittagong along the Karanphūlī River, as early as on Rennell's chart. However, this mysterious town is not to be identified with the place 'Dianga' given by Van den Broucke half way between Chittagong and Rammoe (Rāmú, or Rambú\*), because Dianga is the Dak'hindāngá or the Brahmandāngá, both on the Sangú River, south of Chātgaon, where saltgolahs still exist.†

Regarding the State of Codavascam, which the old maps place east and north-east of Chātgaon, *vide* Wilford's Essay, *As. Researches*, Vol. XIV, p. 450.

The province of Chātgaon was no secure possession, and seems to have been alternately in the hands of the kings of Bengal, the Rājahs of Tiparah, and the kings of Arakan. In 750 A. H. (A. D. 1350), about which year Ibn Batūṭah was in Chātgaon,‡ it belonged to king Fakhrudḍīn of Sunnārgaon. That year falls within the reign of the Arakanese king Meng-di, who is said to have reigned from A. D. 1279 to 1383, or 106 years,§ when the king of 'Thu-ra-tan (Bengal), called Nga-pu-kheng, courted

\* The most south-easterly point to which the Mughuls advanced.

† The word 'dāngá,' which occurs so often in geographical names in Bengal, signifies 'high land'.

‡ Called in Leo's translation صدكوان. \* Regarding Fakhrudḍīn *vide* below.

§ *Vide* Sir A. P. Phayro's History of Arakan, Journal, A. S. Bengal, for 1844, p. 45. Thu-ra-tan Sir Arthur Phayro identifies with Sunnārgaon.



his alliance. About 1407, again, the king Meng-tsau-mwun fled to Bengal, and witnessed the war between Rájah Káns and Jaunpúr. He was ultimately restored to his throne with the help of Bengal troops; but he became "tributary to the king of Thu-ra-tan, and from this time the coins of the Arakan kings bore on the reverse their names and titles in the Persian character. This custom was probably first made obligatory upon them as vassals; but they afterwards continued it *when they had recovered their independence, and ruled the country as far as the Brahmaputra River.* Meng-tsau-mwun, *having got rid of his allies,* meditated a change of capital."

In 1512, Chátgáon was conquered, according to the Ráj Malá,\* by the Rájah of Tiparah, who drove away Husain Sháh's garrison. Whether the Rájah of Tiparah kept it for any time is doubtful; for in 1517, "John de Sylvera was invited by the king of Arakan, and he appears to have gone to Chatigam, then a port of that king's dominions.†" Anyhow, we can now understand why Nuṣrat Shah, Husain Sháh's son, should have invaded Chátgáon;‡ but although popular belief ascribes to his invasion the first Muhammadan settlements in the District, it is clear from the preceding that his invasion cannot have been the first.

It is not known how the District was again lost; but during the troubles of Sher Sháh's revolution, the Mughul invasion, the aggressions of the Portuguese, and the Bengal Military Revolt, Chátgáon did not belong to Bengal. If, therefore, Todar Mall in 1582 included it in his rent-roll, he did so on the principle on which he included Kalinga Dandpát and Sirkár Rájah-mandri in the rent-roll of Orísá §

### *The Eastern Frontier.*

The eastern frontier of Muhammadan Bengal extended from Sunnár-gáon and the Megna (but in Shahjahan's reign, from the Phání River over southern and western Tiparah) northward, and then passed to the east including the District of Silhaṭ. The boundary passed along the southern slopes of the Jaintiah, Khasiah, and Gáro Hills to Mahall Sherpúr in northern

\* Journal, A. S. Bengal, Vol. XIX, for 1850, pp. 545, 546.

† *Vide* Sir A. Phayre's History of Pegu, J. A. S. B., 1873, pt. I, 127.

‡ For particulars *vide* my extract from the *Táríkh-i-Hamdí* in Journal, 1872, Part I, p. 336.

§ "From Satagam [Sátgáon-Húglí] I travelled by the country of the king of Tipara, with whom the Mogen [Mags] have almost continual warres. The Mogen which be of the kingdom of Recon [Rakhaing, Arakan] and Rame [Rámú], be stronger than the king of Tipara, so that Chatigan, or Porto Grando, is often times under the king of Recon." *Ralph Fitch.*

Muhammadan historians spell the word 'Rakhaing' رخنگ, *Rakhang*, or give the still shorter form رخ *Rukh*, whence De Laët's "Roch, on the borders of Bengala."

Maimansingh to the right bank of the Brahmaputra near Chilmári, and from here along the river to Mahall Bhitambar, which formed the north-east frontier. The sirkárs that lay along the boundary were Sunnár-gáon, Bázuhá, Silhat, and G'horág'hát; and the neighbouring countries to the east were Tiparah, Kachhár (the old Hirumba), the territories of the independent Rájahs of the Jaintiah, Khasiah, and Gáro Hills, and, on the left bank of the Brahmaputra, the Karibári Hills, the zamíndárs of which were the Rájahs of Sosang. They depended in reality on the powerful kingdom of Koch Hájo,\* the 'Azo' or 'Asoe' of old maps, which extended along the left bank of the Brahmaputra to Kám-rúp. In the Karibári Hills, the Muhammadans possessed, opposite to Chilmári, the old frontier thánah Hatsilah, which Rennell still marks as 'Hautchella.' The north-eastern frontier was never absolutely fixed. Baritalah, on Van den Broucke's map *Bareithella*, was looked upon as a frontier town till the beginning of Aurang-zib's reign.

The invasions on the part of the Asamese were as numerous as the inroads of the Muhammadans into Ásám, which had commenced under the successors of Bakhtyár Khiljí. During the reigns of Rájah Káns and his son, the Asamese under Chudangpha (A. D. 1414 to 1425) conquered north-eastern Bengal as far as the Karataya;† and as about the same time Jaunpúr was at the height of its power, successfully encroaching on the western frontier, and the Rájahs of Tiparah made likewise invasions,‡ we may assume that Bengal under the kings of the Káns dynasty was most circumscribed. With the restoration of the Ilyás Sháhí dynasty (about A. D. 1440) and the gradual downfall of Jaunpúr, Bengal recovered her ancient limits, and entered upon her most flourishing period. The invasion of Husain Sháh into Kám-rúp is well known;§ but Kám-rúp was only permanently annexed in 1637, when Gauhatti became the north-eastern frontier of Bengal.

Silhat, as we shall see below, was conquered in A. D. 1384, and the earliest inscription hitherto found there, belongs to the reign of Yúsuf Sháh (A. D. 1480). North-western Silhat had the name of Láúd, or Láúr, and the thánah which the Muhammadans established there, was under the commander of the 'Iqlím Mu'azzamábád,' 'the territory of Mu'azzamábád,' also called 'Mahmúdábád.' The exact extent of Mu'azzamábád is still unknown; but the name occurs on coins and on Sunnár-gáon inscriptions, once in conjunction with Láúr, and once with Tiparah, and it seems, therefore, as if the "iqlím" extended from the Megna to north-eastern Maimansingh and

\* Vide Journal, A. S. Bengal, Part I, 1872, p. 53.

† So according to the *Ásám Búrání*; vide Useful Tables, p. 273.

‡ Rájmálá, J. A. S. B., XIX, 1850, p. 542.

§ J. A. S. B., 1872, Part I, pp. 79, 335.

the right bank of the Surmá. In the *Áin*, we find, indeed, under Sirkár Sunnárgáon, a Mahall Mu'azzampúr, the chief town of which lies between the Brahmaputra and the Lak'hia and bears the same name. The present inhabitants, as Dr. Wise tells me, know nothing of its ancient renown; and the only old building is a ruinous dargáh, called after a saint Sháh Langar, the impression of whose foot draws crowds of pilgrims about the time of the I'd uli'tr festival. The saint is said to have come from Egypt.

The thánah Láúr is also mentioned in the *Áin* as a Mahall of Sirkár Silhať, which consisted of Partábgarh; Panchkhand; Banyáchang; Bájúá Bayájú (ع); Jaintiá; Haweli Silhať; Satrk'handal; Láúđ;\* and Harinagar. The author of the *Haft Iqlim* calls Silhať repeatedly سريهاٹ *Srihať*, and this forms explains perhaps the 'Reino Sirote,' which De Barros and Blaeu give instead of 'Silhať' (*vide* Pl. IV). The town of Sirote is correctly placed on the right bank of the Surmá, which leaves no doubt as to the identity of both names.

Kámrúp, which also appears under the names of Kámrúd, Kámrú, and Kámrú, is often mentioned together with Kámatá.† The Brahmaputra which Ibn Batúta calls the 'Blue River', is correctly described by the old traveller as coming from the mountains of Kámrúp. De Barros, however, and Blaeu give the river the name of Caor, and show it as flowing from the Reino de Caor, north of Comota and Sirote. Wilford identifies Caor with "Gcđa or Gaur, *i. e.* Gorgáuw," meaning G'hargáon, the capital of A'sám. But G'hargáon (which is the correct spelling) was only built by Chu-klunpha, between A. D. 1549 and 1563, *i. e.* at a time when the materials had long been sent to Europe from which De Barros in Lisbon wrote his book. It seems, therefore, more natural to compare 'Caor' either with 'Gaur,' the old name of northern Silhať, and which under the form of Gor is placed by Blaeu north of Bengal, or with the name of the Gáros who inhabit the hills near the bend of the Brahmaputra.‡

The south-east frontier was T'iparah, or Tripura, spelt on old Muhammadan inscriptions *Tipúrah*, whence perhaps the form Tipora given by De Barros and Blaeu. Abulfazl, in the *Áin i Akbari*, says—"Tiparah is independent; its king is Bijai Mánik. The kings all bear the name of Mánik,§

\* So at least according to some MSS. *Vide* my text edition, p. 406, where *سركهندل* is a misprint for *سركهندل*. Láúr lies at the foot of the hills.

† For Kámatá *vide* below. Husain Sháh is said to have invaded Kámrúp and Kámatá; and the *Áin* says, Kámrúp and Kámatá are in the possession of the Rájah Koch Bihár.

‡ Regarding Wilford's identification of Sirote, *vide* Asiatic Researches, XIV, pp. 387, 436. The places which Blaeu gives between Gor and Caor, as Kauduana, Mewat, &c., are mentioned below.

§ According to the Rájmalá, the kings of Gaur had conferred this title on the Tiparah Rájahs. It is impossible to reconcile the discrepancy between the Rájmalá and the *Áin* as regards the time when Bijai Mánik reigned. According to the *Áin*

and the nobles that of Nárāyan." The military power was estimated at 200,000 foot and 1,000 elephants; and numerous invasions of Silhaṭ and Sunnārgaon by the Rājās of Tiparah are mentioned in the Rājmalā. The old capital was Udaipur, or Rāngamāṭi, on the left bank of the Gúmti. Hence Van den Broucke speaks of 'Oedapoer and Tipera';\* but on his map he places between Tipera and the Brahmaputra, above Bolua, the "Ryk van Udesse," which is not marked on the maps of De Barros and Blæv. As he does not mention Udesse in his text, the name is either a mistake for Udaipur, or he has been misled by his countryman De Laët, who says, "Udesa, or Udeza, whose metropolis is Jokat or Jekanat, the furthest province of this empire to the eastward, is adjacent to the Mag kingdom, whose inhabitants are most ferocious barbarians," and who thus places Orisá (Odesá) and Jagarnáth near Arakan.

The western and southern portions of Tiparah are included in Todar Mall's rent-roll in Sirkār Sunnārgaon; but they were only conquered, according to Grant, in Shāhjahān's reign; and in A. D. 1728, we hear of a re-conquest, when the district was placed on the rent-roll under the name of Raushanábád.

Before going further, I have a few words to say on the country of Jājnagar, which Stewart, Stirling, Dowson, and Thomas agree in identifying with Tiparah. Stewart and Dowson, however, also apply the name to a portion of Orisá, and compare the word with the name of the town of Jājpur, north-east of Kaṭak, on the Baitarani. Jājnagar is mentioned as a country full of wild elephants (مرفز فيل) in the Ṭabaqāt i Nāqirī, and the two Tārikh i Firūz Shāhīs, i. e. up to about A. D. 1440, after which the name disappears. It also occurs in the Āin; but the passage refers to the reign of Hoshang of Málwah (A. D., 1405 to 1434).†

It is first mentioned as lying, together with Bang, Kāmruḍ, and Tirhut, near the kingdom of Lak'hnautī;‡ and when Ṭughān Khān ('Izzuddīn Abul Fath Ṭughril) invaded Jājnagar, he left Lak'hnautī city in Shawwāl, 641, and arrived after about a month, on the 6th Zi Qa'dah, at Katāsan, the frontier of Jajnagar.§ In the following year, 642 [A. D., 1244], the Rāi of Jājnagar invades the kingdom of Lak'hnautī, and first seizes on Lak'hnor, which above was identified with Rāpha (west of the Húgli), where he kills the jāgirdār Fakhruddīn Lāgharī, and then marches on Lak'hnautī.

he would have reigned towards the end of the 16th century; but the Rājmalā places his reign much earlier. Journal, Vol. XIX, for 1850, p. 546.

\* "The countries of Oedapoer and Tiparah are sometimes independent, sometimes under the great Mogul, and sometimes even under the king of Arakan."

† It may be that Dak'hin historians use the term to a later period.

‡ Tab. Nāqirī, p. 163.

§ Loc. cit., p. 244. Katāsan has not been identified. The MSS. have also Katās, and Katāsn.

This remark would seem to shew that, in the opinion of the author of the *Tabaqât*, Jájnnagar lay somewhere west or south-west of the Bardwán and Húglí Districts, *i. e.* in Jhápkhand, or Chutiá Nágpúr.

The next invasion, on a large scale, was undertaken by the Emperor Balban, who in his pursuit of Sulṭán Mughís, about A. D. 1280, marched from Lak'hnautí to Sunnárgháon, the independent Rái of which makes himself responsible not to let Mughís escape either by land or by water. From Sunnárgháon,\* Balban arrives, after a march of 60 or 70 *kos*, at the confines of Jájnnagar, where Mughís is surprised and killed.

From this remark by Baraní, Stewart, Stirling, Thomas, and Dowson† conclude that Jájnnagar corresponds to Tiparah; and the eastern parts of Hill Tiparah certainly lie about 70 *kos* from Sunnárgháon. The *Rájmálá*, however, does not state that Tiparah had the name of Jájnnagar.

Jájnnagar is again mentioned during the reign of Ghiyásuddín Tughluq, when Ulugh Khán, in 1323 A. D., invades Talinga, Jájnnagar, and Bedar;‡ and lastly, when Firúz Sháh, after his second unsuccessful invasion of Bengal to conquer Sikandar, returns, in 1360, from Hazrat Papḍuah to Zafarábád and Jaunpúr,§ where he stays during the rainy season. He then marches over Bihár to Jájnnagar; arrives at Satgarh (?), the Rái of which retreats; then comes to Báránasí, the residence of a great Rái; crosses the Mahindrí, and goes for some distance into Talinga, to which country the Rái had fled. Firúz Sháh then retreats, passes through the country of Rái Parihán [Bir Bhán Deo, *Lucknow Edition*], and arrives in Padmáwatí and Barantálá, great fields for elephants, and returns quickly to Karaḥ.||

Lastly, in the *Áin* (my text edition, p. 172, l. 6), Hoshang of Málwah goes in disguise to Jájnnagar, in order to obtain elephants.

In these passages it is clear that Jájnnagar represents a country between Talinga and Bihár, or, as expressed in the *Tabaqât*, west of Ráḥla, *i. e.*, the

\* Baraní, p. 87. The *Bibl. Indica* Edition has Hájinnagar, Jájinnagar, and (once) Jájnnagar.

† *History of India*, Vol. III, pp. 112, 113. The *Bibl. Indica* Edition of Badáoní, I, p. 129, calls Mughís wrongly Mu'izz, and says that he had gone towards Jájnnagar and Tárkilah (or Nárkilah, as the *Lucknow* edition of Badáoní has).

‡ Badáoní, I, 223. Dowson, III, 234. Baraní, 450.

§ Zafarábád, which is so often mentioned by Muhammadan historians, lies on the right bank of the Gámṭí, a little below Jaunpúr, which lies on the left bank. The maps give, of course, Jaffurabad.

|| Badáoní, I, 247. Dowson, III, 312 to 316. Dowson has Banárasí, for Báránasí; and *Firishtah* (*Lucknow* edition, p. 147) has 'Banáras, which is the residence of the Rái of Jájnnagar.'

Kaṭak is called in the *Áin* 'Kaṭak Banáras;' and from the account translated by Dowson from 'Afif it is clear that south-western Orísá is meant, although the comparison of Jájnnagar and Jájpúr may be redundant. Rennell in his *Bengal Atlas* (Map VII) gives a Baramtalá in Singhbhúm, near northern Mayurbhanj.

wild districts of western Orisá, Chutiá Nágpúr, and the eastern portions of the Central Provinces, of which Ratanpúr, Bastar, and Sirguja are also mentioned in the *Áin* as hunting places for wild elephants. But it is remarkable that Baraní, in relating Balban's expedition, places Jájnaḡar 70 *kos* beyond Sunnárḡaon, whilst in his account of Tughluq Sháh's reign he gives the same name to a district near Talinga; and we are forced either to believe that there were two Jájnaḡars, one famous for elephants near south-western Bengal (Ṭabaqát i Náçiri, Baraní, Fírúزشáhi, *Áin*), and another in Tiparah or south-eastern Bengal (on the testimony of a single passage in Baraní); or to assume that there was in reality only one Jájnaḡar, bordering on south-western Bengal, and that Baraní in the above single passage wrote Sunnárḡaon by mistake for Sátḡaon,\* which would remove all difficulties.

#### *The Northern Frontier.*

From Bhítarband, near the bend of the Brahmaputra, and in later times from Gauhatti in Kámrúp over K'hontag'hát, the frontier passed along the southern portions of Koch Bihár to Mahall Pátḡaon, or Pátḡram (west of Koch Bihár), which is mentioned by Mughul historians as the frontier-town in the extreme north, and from there along the foot of the hills and forests of Sikkim and Nepál to the northern portions of Púrniah District. Thus by far the greater portion of what is now-a-days called the Koch Bihár Division, did not belong to Bengal.

The Sirkárs along the northern frontier were G'horág'hát, Panjrah, Tájpúr, and Púrniah.

The inhabitants of northern Bengal according to the Ṭabaqát i Náçiri were the Koch, Mech, and Tharú tribes, whose Mongolian features struck the first invaders as peculiar.†

The Rájahs of Northern Bengal were powerful enough to preserve a semi-independence in spite of the numerous invasions from the time of Bakhtyár Khilji, when Deokot, near Dínájpúr, was looked upon as the most important military station towards the north.

During the fifteenth century, the tract north of Rangpúr was in the hands of the Rájahs of K á m a t á (কামত্যা), to which country passing allusion was made above. The kingdom is prominently marked as 'Reino de Comotah,' or Comotay, on the maps of De Barros and Blaeu (Pl. IV). The town of

\* Baran's statement of the distance of 70 *kos* would admirably suit Sátḡaon; it would bring us to Mayurbhanj and western Chutiá Nágpúr.

† For 'Tharú' Stewart has *Neharu*, but there can be no doubt that the author of the Ṭabaqát means the Tharús of Mithila. Vide Dalton, *Ethnology of Bengal*, p. 126; J. A. S. B., 1872, Part I, p. 66.

The *Pádisháhnámah* says of the Asamese also that they resemble in features the Qaráqalpáks of southern Siberia.

Kámatá, or Kámatápúr, lay on the eastern bank of the Darlá river, which flows south-west of the town of Koch Bihár, and joins the Brahmaputra near Bagwah. The river near its confluence with the Brahmaputra, separates mahall Bhítarband from Báhirband. The town itself and the Darlá river are correctly marked on the old maps. Buchanan estimated the circumference of Kámatápúr at nineteen miles; the palace, as in the case of Burmese and Chinese towns, stands in the centre. History informs us that Kámatá was invaded, about 1498 A. D., by Husain Sháh, and legends state that the town was destroyed and Nilamba, the last Kámatá Rájah, was taken prisoner. He escaped, however, and disappeared; but people believe that at some time in future he will be restored.

The Kámatá family was succeeded by the Koch dynasty, to which the present Mahárájá of Koch Bihár belongs. The new Rájás secured their possessions by erecting along the boundary a line of fortifications, many of which are still in excellent preservation.

The prevalence of human sacrifices in Koch Bihár is known from the *Ain*. The *Haft Iqlím* has the following: "There is a cave in this country, which, according to the belief of the people, is the residence of a Deo. The name of the Deo is *Ái*, and the people are zealous in their worship. Once a year they have a feast, when they kill all sorts of animals found in the country, believing that the meritoriousness of the slaughter comes from *Ái*. They likewise kill on the same day the Bhogís, who are a class of men that have devoted their lives to *Ái*, saying that *Ái* has called them. From the time they become Bhogís, they may do what they like; every woman is at their command, but after one year they are killed."

The first European traveller that visited Koch Bihár was Ralph Fitch. He says: "I went from Bengala into the country of Couche or Quicheu, which lies 25 days' journey northwards from Tanda. The king is a Gentile; his name is Suckel Counse;\* his country is great and lieth not far from Cauchin China: for they say they have pepper from thence. The port is called Cacchegate.† All the country is set with bamboos or canes made sharp at both endes and driven into the earth, and they can let in the water and drown the ground above knee deep, so that men nor horses can pass. They poison all the waters if any wars be. Here they have much silk and musk and cloth made of cotton. The people have ears which be marvelous great, of a span long, which they draw out in length by devises when they be young. There they be all Gentiles, and they will kill nothing. They have

\* Shukl Gossáin; vide my essay on Koch Bihár and Assám, *Journal, As. Soc. Bengal*, 1872, Part I, p. 53.

† I. e. the place where the merchants from China meet. Cacchegate is Chichá-kotá, north of the town of Koch Bihár and south of Baksa Fort, Long. 89° 35', in the Bongal Dúárs. It is now British.

hospitals for sheep, goats, dogs, cats, birds, and for all living creatures. When they be old and lame, they keep them until they die. If a man catch or buy any quick thing in other places and bring it thither, they will give him money for it or other victuals, and keep it in their hospitals or let it go. They will give meat to the ants. Their smal mony is almonds, which often times they use to cate." .

As Ralph Fitch mentions Chichákoťá, and the 'Ālamgírnámah Kanthalbári,\* as belonging to the Koch Bihár, it follows that portions of the Dúárs must have once belonged to Koch Bihár.

Aurangzib's army under Mír Jumlah took Koch Bihár on the 19th December, 1661, when the town was called 'Ālamgírnagar,† a name which has not come into use; and the imperial collectors expected to raise a revenue of eight lák's of rupees, whilst in Prince Shujá's rentroll of 1658 Koch Bihár is put down as yielding Rs. 3,27,794.

On Van den Broucke's map, the whole Himálaya tract, from northern Bihár to Ásám, is called 'T Ryk van Ragiawarra,' or the realm of Rájáwará and in the text he says, that "Ragiawara consists of several separate countries, which sometimes fight the Great Mogul, and at other times are forced to submit." Of these several countries he mentions on the map 'T Ryk van Morang and 'T Ryk van Jesval, which latter name is also given on Blaev's map and will be remarked on below.

The Morang was entered by Mughul troops in the beginning of Aurangzib's reign. We first hear of an expedition led by Mírzá Khán, Faujdár of Darbhanga, and Iláh Virdí Khán, Faujdár of Gorák'hpúr, against the refractory zamindár of Morang (beginning of 1075, or end of A. D. 1664). Mírzá Khán died during the expedition; but Iláh Virdí Khán returned with fourteen wild elephants and nine presentation elephants.‡ In the end of 1079 (beginning of 1669), Ma'ǧúm Khán reported that a false Shujá' had appeared in Morang and had caused disturbances there, and Ibráhím Khán and Fidái Khán received orders to capture him wherever he shewed himself, and to send his head to Court. Lastly, in 1087 (beginning of 1676), we hear of a conquest of Morang, but no particulars are given.

\* West of Kanthalbári, the maps give a place called Mogulmurri [Mughulmárf], evidently the scene of a fight with Mughul troops. Another Mughulmárf lies between Bardwán and Jahánábád; a third between Melinípúr and Jalesar, where Akbar's troops defeated Dáúd Sháh (Áin translation, p. 376); and a fourth, eight miles north of Medinípúr.

† Thánah Sangrámgarh, one of Aurangzib's frontier thánahs near Noák'hálí, had received the same name in allusion to the title of the emperor.

‡ 'Ālamgírnámah, pp. 850, 875. *Madsir i 'Ālamgírí*, pp. 64, 150.



**Blaev's Map of Bengal and of the Mughul Empire.**

The map of Upper India by William and John Blaev (Pl. IV) is taken from their "Theatrum Orbis Terrarum," Amsterdam, 1645 to 1650, Vol. II,\* and is based upon the Portuguese and Dutch charts that existed at the time, and upon the descriptions of European travellers. As far as Bengal is concerned, it is a reprint of De Barros' map, and represents, therefore, the knowledge which European geographers had of Bengal about 1540. In point of accuracy it is much inferior to Van den Broucke's map of 1660,† given in Valentyn's work. But the map is of great interest, as it helps us to unravel the difficulties in Terry's enumeration of the provinces of Bengal and other portions of the Dihli empire,‡ which has also been followed by the Dutch traveller De Laët in his "India Vera" (Amsterdam, 1631), and of which traces may still be found on Van den Broucke's map. It is with a view to explain the extraordinary configuration of Bengal on the old maps that I have given the present chapter a place in this essay.

From a glance at the map, it will be seen that our early geographers had no information of the extent and situation of the countries which we now-a-days call the Central Provinces and Chutiá Nāgpúr. Hence Gwáliar, Narwar, and (on Van den Broucke's map) Málwá, bound Bengal on the west; the Santál mountains are continued eastwards to meet the Ásám mountain-chains, and places belonging to the Central Provinces have been put north of Bengal.

Terry enumerates the following provinces as belonging to the Mughul empire—1. *Candahore*, Qandahár; 2. *Cabul*; 3. *Multan*; 4. *Haiacan*, Hájkán, a sirkár of Sindh; 5. *Buckor*, Bhakkar; 6. *Tatta*; 7. *Soret with Jonagar*, Sorat'h with Júnágarh; 8. *Jesselmeere*; 9. *Attok*; 10. *Peniab*, Panjáb; 11. *Chishmeere*, Kashmir; 12. *Banchish*, "the chief city is called *Bishur*; it lyeth east, somewhat southerly from Chishmeere, from which it is divided by the River Indus." Here we have the first misplacement. Terry means Bangash and Bajor (Sawád, Swat); but for *East*, he should have said *West*.

\* Capt. J. Waterhouse drew my attention to a copy of this work in the Library of the As. Society.

† Matthæus Van den Broucke was Land-Voogd, or governor, of Choromandel, which included Bengal, from 1658 to 1664, during which time he compiled the map in the Vth Volume of the 'Beschryving van Choromandel' in François Valentyn's 'Oud en Nieuw Oost Indien', Amsterdam, 1728. (Library, As. Soc. Bengal, No. 2266.)

‡ Edward Terry was chaplain to Sir Thomas Row, the Ambassador to Jahán-gír's Court, and was later Rector of the Church at Greenford, Middlesex. He presented his 'Voyage to East India,' in 1622, shortly after his return to England, to the then Prince of Wales; but he only published it in 1655, when he was sixty-four years old.

13. *Jangapore*, "the chief city so called; it lieth upon the River *Kaul*, one of those five rivers which water *Peniab*." (?) De Laët has 'Jengapor or Jenupar,' between Lahore and Agra. 14. *Jenba*, east of *Peniab*, Chamba. 15. *Dellee*,\* *Dihli*. 16. *Bando*; 'it confineth Agra to the west.' This is *Bándhú*, or *Bándhúgarh*, south-east of *Agrah*. 17. *Malwa*; 18. *Ohitor*; 19. *Gujarat*; 20. *Chandis*, *Khándesh*; 21. *Berar*, with the chief city *Shapore*;† 22. *Narwar*; 23. *Gwalior*; 24. *Agra*; 25. *Sambal*, *Sambhal*, or *Murádábád* District. 26. "*Bakar*, the chief city called *Bikaneer*, it lyeth on the west side of the River *Ganges*." The whole remark seems to be erroneous. 27. *Nagracot*, *Nagarkot* or *Kángrah*. 28. *Siba*, "the chief city is called *Hardware*.‡" 29. *Kakares*, the principal cities are called *Dekalee* and *Púrholá*." Terry means the *Gakk'har* District, the chief cities of which were *Dángalí* and *Pharwálah*; *vide* *Áin* translation, p. 621. Terry also remarks that the *Caucasus* (*Himá-laya*) divides *Kakares* from *Tartaria*, which accounts for its northern position on *Blaev's* map. 30. *Gor*, "the chief city so called; it is full of mountains; the River *Sersily*, a tributary unto *Ganges*, has its beginning in it." *Vide* 32.

31. *Pitan*, "the chief city so called; the River *Canda* waters it, and falls into the *Ganges* in the confines thereof." This is *Paithán*, the form used by *Abulfazl* for *Paṭhán*, or *Paṭhánkot*. Terry evidently means the whole hill tract of the *Sirmúr* range, as far as the *Alaknandá*. It is, however, possible that he meant the *Markandá*; but this river does not flow into the *Ganges*. The error in the position of *Pitan* is remarkable, as Terry, *DeLaët*, and *Blaev* give *Temmeri* (a Dutch spelling for *Dhamerí*, the old name of *Núrpúr*, near *Paṭhánkot*) between the *Rávi* and *Nagarkot* (*Kángrah*).

32. *Kanduana*, "the chief city is called *Karhakatenka*; the River *Sersily* parts it from *Pitan*. This and *Gor* are the north-east bounds of this Monarchy." There can be no doubt that *Kanduana* is *Gondwánah* (Central Provinces), of which the capital is *Garha-Katanga* (*Jabalpúr*); *vide* *Áin* translation, p. 367. If *Gor* is the north-east boundary of the empire, it is the *Gaur* of *Silhat*, mentioned above, or the *Gáro Hills*. *Sersily* is a misprint for *Sersity*, the *Saraswatí*, which after the *Jamuná* is the principal (legendary)

\* "Which signifies an Heart, and is seated in the heart of the Mogul's territories." Terry. This unfortunate etymology shews however that Terry knew some Persian, because he cleverly disposes of the final *yá*. Similarly, he derives 'Khasran,' from خوش and روم; and 'Sultán Khurram' from کرم *karam*, liberality!

† *Sháhpúr*, built by *Sultán Murád*, *Akbar's* son, six kos south of *Bálápúr*, now in ruins.

‡ I do not know whether the country near *Haridwár* was ever called *Síba*. In the *Áin*, a pargana of the *Bísat Jálándhar Dúáb* is called *Síbah*.

tributary of the Ganges. The map follows the legend and makes the Saraswatī flow into the Ganges near Helobass (Ilāhábās, the old name of Ilāhábād).<sup>\*</sup> De Laët increases the confusion by calling the Sersily 'Perselis.' But the passage need no longer exercise commentators. Blaeu's map clearly shows how erroneously the early geographers arranged the provinces.

33. *Patna*, "the chief city so called; the River Ganges bounds it on the west; Sersily on the east; it is a very fertile Province."

34. *Jesual*, "the chief city is called Raipore; it lieth east of *Patna*." Van den Broucke puts Jesual east of Morang; and Blaeu's map marks it as a country for elephants. It seems, therefore, that Raipūr in the Central Provinces is meant, the elephant country *par excellence*, though the name 'Jesual' is not clear to me.

35. *Mewat*, "the chief city is called *Narnol*; it is very mountainous." This is Mewāt, south-west of Dihlī, with Nārnol. I am at a loss to understand how Mewāt could have been placed so far away from Dihli; but Blaeu's map shows why Terry and De Laët mention it here. The error was not even detected by Van den Broucke, who places 'T Ryk van Mewat east of the Brahmaputra, south of 'Cos Assam.'<sup>†</sup>

36. *Udessa*, "the chief city called *Jeknat*; it is the most remote part east of this empire." De Laët says: It is the furthest province of this empire to the eastward, is adjacent to the Maug kingdom, whose inhabitants are most ferocious barbarians." DeBarros and Blaeu have avoided this mistake; Van den Broucke, however, places 'T Ryk van Udesse north of Bollua (Bhaluah), between Tiparah and the Brahmaputra. But Orisā and Jagannāt'h are meant. The spelling Udessa is clearly a transliteration of اوريسا, Uḍesā, and DeLaët has overlooked the identity of 'Orisa' and 'Udessa.'

### 37. *Bengala*.

It would take me too far from my subject, were I to enter on the identification of the places in western India on Blaeu's map. I hope to do so at a future period, or would rather leave the task to Mr. E. Lethbridge, who has lately published valuable extracts from De Laët's work in the Calcutta Review.

<sup>\*</sup> According to the legend, the Saraswati, which is lost in the sand east of Bhatinda District, joins the Ganges *below the ground* at Ilāhábād. Hence at Tribeni and other places in Bengal, wherever two rivers leave the Ganges, we find the names Saraswati and Jamunā repeated.

<sup>†</sup> The London edition of 1655 has 'Jesnat.' De Laët has "Jesual, whose metropolis is Raipore or Ragapore, lies to the east of Patna, and north-west of Bengala."

<sup>‡</sup> *Asām* is often called *Koch Asām*.

## PART II.—HISTORICAL.

The Muhammadan period of the history of Bengal may be conveniently divided into five parts—

I. The 'Initial period,' or the reigns of the governors of Lak'hnaúti appointed by the Dīhlī sovereigns, from the conquest of Bengal by Muhammad Bakhtyār Khiljī, A. D. 1203 to 1338 A. D.

II. The period of the independent kings of Bengal, from 1338 to 1538.

III. The period of the kings of Sher Shāh's family and their Afghān successors, from 1538 to 1576.

IV. The Mughul period, from 1576 to 1740.

V. The Nawábī period, from the accession of 'Alī Virdī Khān, in 1740, to the transfer of Bengal to the E. I. Company.

In the following pages, I shall principally treat of the first and second periods.

## I.

## THE INITIAL PERIOD (1203 TO 1338, A. D.)

The first period has been almost exhaustively described by Mr. E. Thomas in his 'Initial Coinage of Bengal,' published in the Journal for 1867, in which he details the results of his examination of selections made from 13,500 pieces of silver, accidentally found in Koch Bihār in August, 1863. I can, therefore, with regard to this period, merely give a few interesting inscriptions which have since turned up, and note a few coins—second gleanings from the Koch Bihār *trouvaille*—which are in the Society's cabinet.

Of the following inscriptions belonging to the Initial Period, one was received from General Cunningham, and the others from Mr. Broadley, who handed over to the Society in all twenty-two rubbings, which I have deciphered and translated. The original stones are either attached to old public buildings in the town of Bihār, or are preserved in the Museum of that place.\*

No. 1. *The Tughril Inscription of Bihār.* [B. C.]

امر ببناء هذه العمارة في أيام مملكة المجلس العالي خان الاعظم  
خاقان المعظم عز الحق والدين غياث الاسلام والمسلمين مغيب الملك  
والسلطين ابي الفتح طغرل السلطاني خلد الله ملكه العبد مبارك خان  
الخازن تقبل الله منه في المحرم سنة اربعين وستمائة //

\* Together with the rubbings, Mr. Broadley made over to the Society readings of several early Muhammadan coins of importance, and also a few notes on the Muhammadan buildings of the town of Bihār. The coins have since passed into the collection of Col. Guthrie, and have been published by Mr. E. Thomas in his 'Second Part of the Initial Coinage of Bengal' (about to be reproduced in this Journal). The "notes"

This building was ordered to be erected during the days of the reign of the Majlis i 'Alī, the great Khān, the exalted Khāqān, 'Izzul haq waddīn, the help of Islām and the Muslims, the helper of princes and kings, Abul Fath Tughril, the Royal, may God perpetuate his reign! The slave, Mubārak Khān, the Treasurer,—may God grant acceptance!

In the month of Muharram, 640, [July, 1242, A.D.]

The inscription is a large slab of basalt, and is at present in the Bihār Museum. \*It was found let into brick work on the north side of the great Dargāh, to protect the doorway from rain. A photozincograph of it was published by me in this Journal for 1871, Pt. I, Pl. vii.

It is of interest to remark that South Bihār was under the Lak'hnaufī governors from Bakhtiyār Khiljī's time.

Tughril in 631 (A. D. 1233-34) succeeded Saifuddin Aibak as governor of Lak'hnaufī, in which office he continued till the 5th Zi Qa'dah 642 (or 4th April, 1245), on which day he was forced to cede his office to Qamaruddin Timur Khān. Tughril was appointed to Audh; and Timur Khān remained in Lak'hnaufī till 29th Shawwāl, 644, (or 9th March, 1247) on which day both he and Tughril died.\*

The following are the governors of Bengal from Saifuddin Aibak to Bughrā Khān. The dates differ slightly from Mr. Thomas's list on p. 8 of his 'Chronicles.'

Saifuddin Aibak. Dies at Lak'hnaufī in 631. *Tubq.*, p. 239.

'Izzuddin Abul Fath Tughril Tughān Khān, governor from 631 to 5th Zi Qa'dah, 642. *Tubq.*, p. 245. He withdraws to Audh, and dies on the 29th Shawwāl, 644.

Qamaruddin Timur Khān, governor from 5th Zi Qa'dah, 642, to 29th Shawwāl, 644, when he, too, dies. *Tubq.*, p. 246.

Ikhtiyāruddin Yūzbak Tughril Khān, proclaims himself king under the title of Sultān Mughīşuddin. Perishes in Kāmrup. *Tubq.*, p. 263. No dates are given.

Jalāluddin Mas'ūd, Malik Jānī Khiljī Khān, becomes governor on the 18th Zi Qa'dah, 656 (or 17th Nov., 1258). *Tubq.*, pp. 206, 225.

'Izzuddin Balban, was governor in 657, in which year he was attacked by Tājuddin Arsalān Khān Sanjar i Khwārazmī, who, however, was captured or killed by 'Izzuddin. *Tubq.*, p. 267.†

are of little value, and are moreover incomplete, so that I can only give my readings and translations of the Bihār inscriptions. They are marked 'B. O.' (Bihār Collection.)

\* *Tabaqāt i Nāṣirī*, pp. 245, 246, where Tughril is called Tughril Tughān Khān. Hence the *tārīkh* on p. 246 is wrong, and for *sīn* we have to read *mīm*. 'Tughril' signifies a kind of falcon or hawk, and *tughril shudan*, like *shunqār shudan*, means 'to die.' 'Shunqār' also is a kind of falcon.

† Hence Tājuddin Arsalān Khān should not be put among the governors of Bengal.

Muhammad Arsalán Tatar Khán, son of Arsalán Khán Sanjar. He had been for some time governor, when the emperor Balban ascended the throne (664). *Baraní*, p. 66. After a few years he was succeeded by Tughril, who proclaimed himself king under the name of Sultán Mughíṣuddín. His fate has been mentioned above. No dates are given.

Bughrá Khán, Náṣiruddín Mahmúd, second son of emperor Balban.

No. 2. *The Bárahdarí Inscription of Bihár.* [B. C.]

This inscription also belongs to the time of the early governors of Bengal; but unfortunately the first half with the name of the governor is wanting. Its date however, A. H. 663, shews that it belongs to the time of Muhammad Arsalán Tatar Khán, governor of Bengal in the end of the reign of Náṣiruddín Mahmúd of Dihlí. The inscription was found in the yard facing the shrine of Sháh Fazlullah, Bárahdarí Mahallah, Bihár.

• • • • • الله و امرته و ابقي في ديار الممالك عمارته ببناء هذه المقبرة المتبركة شهرسة  
• • • • • العدل الرافة المخصوص بعناية الرحمن • • • سلطان شاه نور اللهم تزيده و  
بيض غرته و اجعل قبره روضة من رياض الجنان و لا تجعل حفرة من حفر النيران  
في ليلة الاحد الثامن عشر من جمادى الاولى سنة ثلاث و ستين و ستمائة و المعمار  
عبدھما المنون بانعامھما مجد الكابلي ॥

• • may God (perpetuate) his rule and governorship, and may He cause his edifice to remain in the realm • • by the erection of this blessed tomb in the months of the year • • Sultán Sháh, (O God, illuminate his grave, and whiten his forehead, and make his grave a garden of the gardens of Paradise, but do not make it a pit of the pits of fire!). On Saturday evening, the 18th Jumáda I, 663. The architect is their slave, who is obliged by their rewards, Majd of Kábul. [8th March, 1265.]

No. 3. *The Kai Káús Inscription of Kagol.* Pl. V, Nos. 1 and 2.

A rubbing of this inscription was received from General Cunningham. Its date is, curious to say, the same as that of the Kai Káús inscription of Gangarámpúr, published by me in the Journal, for 1872, p. 103. Mr. Thomas has published coins of this king, bearing the dates 691, 693, 694, 695 (*Chronicles*, p. 149), and the cabinet of the As. Soc. of Bengal contains two clear specimens of 691, and 696 (Lak'hnautí mint).

The inscription is—

وقو ( ؟ ) لبناء هذا المسجد الجامع في عهد الدولة السلطان المعظم  
مالك رقاب الامم مولاي ملوك الترك والعجم صاحب التاج والختام  
ركن الدنيا • • • • • س شاه السلطان بن سلطان بن سلطان يمين خليفة  
الله ناصر امير المؤمنين في نوبت الخان الاعظم خاقان المعظم اختيار  
الحق والدين خان خان الشرق والاصين سكندر الثاني فيروز انكشاه السلطان

• The text has a dual.

حَدَّ اللَّهُ دولته \* \* \* \* \* المظفر المنصور الغازي ضياء الدولة والدين  
 الغ خان ادام الله دولته وزاد خيره في الغرة من المحرم سنة سبع  
 وتسعين وستمائة ۱۱

This Jami' Mosque was built during the reign of the great Sultān, the owner of the necks of nations, the master of the princes of the Turks and the Persians, the lord of the crown and the signet, Ruknuddunyā waddīn [Kai Káu]s Sháh, the king, son of a king who was the son of a king, the right hand of God's Viceregent, the helper of the Commander of the Faithful, and during the governorship of the great Khán, the exalted Kháqán, Ikhtiyár ul haq waddīn, the Khán of the Kháns of the East and of China, the second Alexander, Fírúz Aitigin Sultān, (may God perpetuate his rule!) \*\*[by] the victorious, the invincible, the champion, Ziyāuddaulah waddīn Ulugh Khán, may God perpetuate his rule and increase his benefits! On the 1st day of Muharram, of the year 697. [19th October, 1297]\*

\* This inscription contains what Mr. Thomas calls an unusual reiteration of the words *ibnu sultān ibni sultān*, which is perhaps more unusual on coins than on inscriptions. But the spirit of pride that breathes in the words is apparent, when we compare with it the legend of the coins struck in Tirhut by the rebel Bahádur, given in Badāoni II, p. 298.

In Raziya's Bengal coinage (Thomas, *Chronicles*, p. 167), I read for مهرقة, which has no sense, ممدقة, *mumihlatu*, 'the helper,' the same as ناصرة. 'Raziya' stands for 'Raziya un-nisá,' i. e. one who among women is looked upon with favour.

I also take this opportunity to give my reading of the Náqiruddín Mahmúd Inscription, published by Mr. Thomas in his *Chronicles*, p. 129, an inscription which in style is similar to the above Kai Káu's inscription. General Cunningham has favored the Society with a rubbing of it.

[بني] هذه العمارة في عهد مملكة السلطان الاعظم مالك رقاب الامم ناصر  
 الدنيا والدين سلطان السلاطين ذى الامان لاهل الايمان وارث ملك سليمان  
 صاحب الخاتم في ملك العالم ابي المظفر محمود بن السلطان خلد الله ملكه و  
 سلطانه بامر ملك العالم الكبير اعظم قنلقخان بها الحق والدين ملك ملوك  
 الشرق والصين بابلن الشمسي في ايام ايلاته دامت معاليه في العاشر من رجب  
 سنة اثني وخمسين وستمائة ۱۱

'This building was erected during the reign of the great Sultān, the owner of the necks of nations, Náqiruddunyā waddīn, the king of kings, who protects the people of the Faith, the heir of the kingdom of Solomon, the lord of the signet in the kingdom of the world, Abul Muza'far Mahmúd Sháh, the son of the king (may God perpetuate his rule and kingdom!), by order of the learned and great Malik, A'zam Qutlugh Khán Baháulhaq waddīn, the Malik of the Maliks of the Eastern Provinces and China, Balban the Shamsí [slave of Shamsuddin Ilitmiash], during the period of his governorship, may his high qualities endure! On the 10th Rajab, 652.'

From this it will be seen that A'zam Qutlugh Khán (Balban) does not call himself *Malik ul 'Alam* 'the Malik of the world,' but *almalik ul 'dlim*, 'the learned Malik.'

The reading of the name 'Aitigin' or 'beautiful moon,' in this inscription was suggested by Mr. Redhouse, and I gladly correct my reading *Itgin* in the Kai Káuś inscription, published by me in the Journal for 1872, p. 103, where the correct name of the builder is Zafar Khān Bahrām Aitigin, the Royal (*sulṭānī*).\*

The date of this inscription is the latest yet discovered of Kai Káuś's reign.

Kai Káuś seems to have been succeeded by his brother Shamsuddīn Fīrūz Shāh (I). Mr. Thomas quotes coins of this king, dated 702, 715, 720, 722, and the cabinet of the Asiatic Society of Bengal has three specimens, struck at Lak'hnaūtī, with clear dates 706 and 715, and (slightly doubtful) 710.

Three inscriptions of Fīrūz Shāh have hitherto been found, of which one, dated 1st Muharram, 713, or 28th April, 1313, was published by me in this Journal, for 1870, Part I, p. 287.† The other two inscriptions are from Bihār, and are dated 709 and 715. They reveal that Fīrūz Shāh had a son Hātim Khān,‡ who in those two years, and probably in the interval, was governor of Bihār.

No. 5. *The Fīrūz Shāh (I) Inscription of Bihār.* [B.C.]

بنى هذه العمارة المزينة ( ؟ ) فى عهد السلطان الاعظم شمس الدنيا  
والدين ابى المظفر فيروز شاه السلطان خلد الله ملكه وسلطانه ونوبة ايلة  
الخان العادل البازل الغارى \* \* الحق حاتم خان ابن السلطان خلد ملكه  
وسلطانه العبد الضعيف محمد حسين كهروزي فى شهر سدة تسع وسبعماية ١١

This (additional?) building was erected in the reign of the great Sultān Shamsuddunyāwaddīn Abul Muzaṭṭar Fīrūz Shāh, the king, (may God perpetuate his kingdom and his rule!) and during the governorship of the just and liberal Khan, the champion of God, \*\* Hātim Khān, the son of the king, may God perpetuate his rule! The weak slave Muhammad Husain Tak'harorī. During the months of the year 709. [A. D., 1309.]

A plate of this inscription was published in this Journal, for 1871, Part I, Pl. viii. The inscription itself is attached to a lofty gateway, which together with an arched hall, fast falling to decay, and a roofless mosque, forms the remains of what tradition calls Hātim Khān's palace. It stands on a gentle eminence, due east of the Bihār mountain.

\* Or, we might at once translate, 'the Sultān;' for *sulṭānī*, as abstract noun, occurs on numerous coins; vide Proceedings A. S. Bengal, for June, 1870, p. 152. The translation of the other portions of the inscription is here confirmed.

† Where in the third line for الأكرام read الأكرام.

‡ Besides the four sons mentioned by Mr. Thomas, Chronicles, p. 148.




## No. 6.

بنى هذا المسجد فى نوبة السلطان الاعظم شمس الدنيا و الدين ابوالمظفر  
 فيروز شاه السلطان و ايام اماره خاقان الزمان المخاطب بحاتم خان ادام الله  
 ظلالها العبد الواثق بالله و لكرمه الراجى احقر الخلاق بهرام بن حاجى  
 تاب الله عليه و غفر لوالديه فى الغرة من رجب سنة خمس عشرة  
 و سبعمائة ١١

This mosque was built in the reign of the great Sultán Shamsuddunyá waddín Abul Muza'far Fírúz Sháh, the king, and during the governorship of the Kháqán of the age, known as Hátim Khán, may God cause their shadows to last! The slave, who trusts in God and hopes for His mercy, the meanest of mankind, Bahrá'm, son of Hájí, may God turn to him and may He pardon his parents!

On the first day of the month of Rajab of the year 715. [1st October, 1315.]

This inscription, a fine slab of basalt, leans against the wall of the Chhotá Dargáh in Bihár.

Two other sons of Fírúz Sháh, Shihábuddín Bughdah Sháh and the well known Ghiyásuddín Bahádur Sháh, struck coins as 'kings of Bengal' during the lifetime of their father. Of the former, Mr. Thomas says (Chronicles, p. 194)—"Neither history, incidental biography, nor numismatic remains avail to do more than prove the elevation, as they seem to indicate the brief and uneventful rule, of Shihábuddín Bughdah Sháh. No date or place of mintage is preserved." However, the cabinet of the Asiatic Society possesses two specimens,\* one of the same kind as published by Mr. Thomas (Chronicles, Pl. VI, No. 1), and a new variety, containing the same legend, but with the letters, on the obverse, close together, and with a  instead of the star on the reverse. The former fortunately contains a complete margin, with the clear legend—

ضرب هذه الفضة بلكهنوتى سنة ثمان عشر و سبعمائة

*This silver coin was struck at Lak'hnauli in the year 718.*

Mr. Thomas looks upon the *d* in the name of this king as the Hindí *ṣ*, which is so often interchanged with *ṣ re*. This may be the case, inasmuch as Shiháb, according to Muhammadan custom, would assume the name of his grandfather *bughrá*;† but in India, people seem early to have substituted a *dál* for the *re*; hence we find in the *Áin* the form *bughdí*.‡

Ghiyásuddín Bahádur Sháh was the last of the Balbaní kings of Bengal. "In A.H. 733, Muhammad ibn i Tughluq is found issuing his own coin in

\* Evidently Bábu Bájendralála Mitra's selections from the Koch Bihár hoard.

† Which signifies a male 'Bactrian camel' (with two humps). The spellings given in dictionaries are بوغرا - بوغرا - بوغرا - بوغور - بوغور - بوغور.

‡ Vide my *Áin* translation, p. 143.

Bengal, and Bahádúr, defeated and put to death, contributed an example to insurgent governors in his own skin, which was stuffed and paraded through the province and the empire.\* And already the year before, we find that a palace had been built, or renovated, in Bihár for the Imperial *Náib*, which tradition still calls the 'sukúnat,' or residency.

No. 7. *The Sukúnat Inscription of Bihár.* [B.C.]

بسم الله الرحمن الرحيم  
 شد تجدید عمارت این دروازه عالی عالم آرای و ابن طاق رفیع فلك ساي در ایام  
 خلافت خلیفه جهانپناه آسمان بارگاه خدایگان سلاطین گیهان فرمان فرمای عالمیان  
 ذی الامن و الامان لاهل الایمان وارث ملک سلیمان ابوالمجاهد محمد بن  
 تغلقشاه سلطان خلعت خلافت و سلطانه فی الغرة من الشهر المبارک رمضان سنة  
 اثني و ثلاثين و سبعماية ۱۱

This high and world-adorning gate, and this lofty, heaven-touching portico, were renewed in the reign of the Khalifah, the asylum of the world, whose court is the heaven, the Lord of the kings of the universe, the ruler of mankind who gives security and safety to the people of the Faith, the heir of the kingdom of Solomon, Abul Mujáhid Muhammad, son of Tugluq Sháh, the Sultán, (may his kingdom and rule be perpetuated!). On the first day of the blessed month of Ramazán, 732, A. H. [27th May, 1332].

From this time till the beginning of the 10th century, Southern Bihár as remarked above, remained detached from Bengal, and followed the fortunes of the empires of Dihli and of Jaunpúr.

Muhammad Tughluq's governors of Lak'hnautí, Sátgáon, and Sunnár-gáon did not long remain undisturbed, and the death of Bahrám Khán, governor of the last province, was the commencement of new revolutions, which led to the establishment of a line of independent kings.

• II.

THE SECOND PERIOD, OR THE PERIOD OF THE INDEPENDENT KINGS OF  
 BENGAL (1338 TO 1538, A.D.)

For this period I shall take the kings singly, and collect for each reign whatever new information I have been able to gather from the rubbings received from General Cunningham, Dr. J. Wise, and Mr. E. V. Westmacott, C. S., and from unpublished Bengal coins in the Society's cabinet.

I have also compared the corresponding chapter of the *Riyázussaláfin* with the statements given in the *Ṭabaqát i Akbari* and in *Firishtah*.

The line of the independent kings commences with

\* Thomas, *Chronicles*, p. 200.

**I. Fakhruddīn Abul Muzaffar Mubārak Shāh.**

He had been *Silāhdār*, or armour-bearer, to Bahrām Khān, the Dihlī governor of Sunnārgāon, and on his master's death in 739 A. H., or 1338 A.D., proclaimed there his independence.

According to the *Taba'āt i Akbarī*, *Firishtah*, and the *Riyāz ussalātin*, Mubārak Shāh was killed by 'Alī Mubārak in 741, after a reign of two years and some months.\* But as his coins extend over a period of more than ten years, from 739 to 750, it looks as if the date given in the histories should be corrected to *ده سال و چند ماه*, 'ten years and some months.' Mr. Thomas is willing to antedate Mubārak Shāh's accession to 737; but the coins (*Chronicles*, p. 263, and Plate vi, fig. 7) do not satisfactorily prove this, because the reading *سبع*, in the absence of diacritical marks, is more likely *سبع*, which the histories give, especially because the numerous coins hitherto found do not give the intervening year (738).

The name 'Mubārak Shāh' has been proved by coins, the histories only call him Sultān Fakhruddīn or more familiarly still, Fakhrā.† Ibn Baṭūṭah also mentions him under the name of Fakhruddīn, and says that he was an eminent man, kind to strangers and *Qāfīs*.‡

Mubārak Shāh's son is mentioned below. His son-in-law Zafar Khān fled from Sunnārgāon over Tattah to Firūz Shāh in Dihlī, who, at his request, invaded Bengal a second time in the beginning of Sikandar Shāh's reign.§

**II. 'Ala'uddīn Abul Muzaffar 'Alī' Shāh.**

Regarding this king the *Riyāzussalātin* has the following :

'It is said that Malik 'Alī Mubārak, who as king is styled Sultān 'Alāuddīn, was a trusted servant of Malik Firūz [subsequently Firūz Shāh III. of Dihlī], and Malik Firūz was brother's son to Sultān Ghiyāsuddīn Tughluq Shāh, and son of the paternal uncle of Muhammad Shāh. Muhammad Shāh, in the first year of his reign, made Malik Firūz his Nāib-Barbak. Now at this time, Hājī Ilyās, the foster-brother of 'Alī Mubārak, did something wicked and fled from Dihlī. Malik Firūz asked 'Alī Mubārak what had become of Hājī Ilyās. 'Alī Mubārak went in search of him; and when he found no trace of him, he told Malik Firūz that Hājī Ilyās had run away. Firūz scolded him and told him to leave his presence. 'Alī

\* The *Riyāz* has five months. Stewart places his death in 743; but all histories have 741.

† Dowson, *Elliot's History*, III, p. 304.

‡ See Ibn Baṭūṭah, p. 195.

§ These facts are only mentioned by Shams i Sirāj, who moreover places Fakhruddīn's defeat and death immediately after Firūz Shāh's first invasion of Bengal in 754. This is clearly a few years too late.

Mubárák now went to Bengal. On his way, one night, he had a dream and saw the revered saint Jaláluddín Tabrízí, who said to him, "I will give thee the kingdom of Bengal; but thou wilt have to build me a vault." 'Alí Mubárák put the finger of acceptance on his eye, and asked where it was to be built. The saint replied, "In the town of Panđuah at a place where thou wilt see thirty bricks one over another, and below them a fresh rose of a hundred petals."

'When 'Alí Mubárák arrived in Bengal, he entered the service of Qadar Khán, [the Imperial governor of Lak'hnautí] and received from him the command (*bakhshigari*) of the army. But when Fakhruddín revolted against Qadar Khán, 'Alí Mubárák killed his benefactor, and proclaimed himself king under the title of Sultán 'Aláuddín. He then made war upon Fakhruddín, and slew him "as a punishment for having killed his benefactor." Leaving thanahs in (the province of) Lak'hnautí, 'Aláuddín marched to subjugate other parts of Bengal. But from the time he had proclaimed himself king, the whirlpool of pleasure had made him forgetful of his promise to the Saint, when one night Jaláluddín again appeared to him and said, "O Sultán 'Aláuddín, thou art now king of Bengal, but me thou hast forgotten." The king next day at once searched for the bricks, and found them just as the saint had described. There he built the vault, the ruins of which exist to this day.

'Now about this time Háji Ilyás also arrived in Panđuah. Sultán 'Aláuddín put him into prison, but after some time, at the request of his mother who had been Sultán 'Aláuddín's nurse, he set him at liberty, and allowed him to come to court. Háji Ilyás, in a short time, found means to gain over the army, killed 'Aláuddín with the help of the eunuch, and proclaimed himself king under the name of Shamsuddín Bhangrah.

'The reign of Sultán 'Aláuddín lasted one year and five months.'

This extract is so far satisfactory, as it explains the relation between Fírúz Sháh, 'Alí Mubárák, and Háji Ilyás.

The evidence of coins, as in the case of the preceding king, gives 'Aláuddín 'Alí Sháh a longer reign than the histories. Mr. Thomas (*Chronicles*, p. 265) gives a coin of the year 742, and he adds that he has seen coins of 744, 745, 746. There is nothing strange in the name '*Alí Mubárák*, which he thinks has arisen from "a strange jumble of Muhammadan writers, who endowed 'Alí Sháh with the surname of his adversary Mubarak Sháh;" for 'Alí Mubárák is as common a name as Mubárák 'Alí, and the histories say that this was 'Alí Sháh's name before accession.

From the fact that the coinage of Mubárák Sháh is restricted to the Sunnárgháop mint, and that of 'Alí Sháh to Fírúzábád (*i. e.* Panđuah), we may conclude that the former held Eastern, and the latter Western Bengal.

But 'Alí Sháh was vigorously opposed by Háji Ilyás, who struck coins

in Paṇḍuah, 'Alī Shāh's capital, in 740 and 744, and in uninterrupted succession from 746 (probably the correct year when 'Alī Shāh was overcome by him) to 758.

### III. Ikhtiya'ruddīn Abul Muzaffar Gha'zi' Sha'h.

Fakhruddīn Mubārak Shāh was succeeded in Eastern Bengal by Ikhti-yāruddīn, who styles himself "son of the Sultān." We may, therefore, accept Mr. Thomas's hypothesis that he was the son of Mubārak Shāh. Coins are the only testimony on which the name of this king of Eastern Bengal has found a place in the list of kings. The figure of one of the coins given by Mr. Thomas, as also the specimen in the cabinet of the Bengal Asiatic Society, shew the year 753.\*

### IV. Shamsuddīn Abul Muzaffar Ilyās Sha'h.

The relation of this king to 'Alāuddīn 'Alī Shāh and Fīrūz Shāh III. of Dihlī has been mentioned above. Having in 746 become master of Western Bengal, he established himself, in 753, in Sunnārgāon (Thomas, p. 263), and thus founded a dynasty, which, with an interruption of about forty years in the beginning of the 9th century of the Hijrah, continued to rule over Bengal till 896 A.H.

Ilyās Shāh's successors in Eastern Bengal were followed by an attempt to extend the western boundaries of the kingdom, and according to the *Riyāz* he pushed as far as the Banāras district. In order to punish him, Fīrūz Shāh, in 754, after marching through Tirhut and Pūrniah, invaded Bengal and besieged Ekdālah. The defeat of Ilyās Shāh is almost humorously described by Ziyā i Baranī. But "the invasion only resulted in the confession of weakness, conveniently attributed to the periodical flooding of the country," and Fīrūz Shāh withdrew,† appointing collectors, apparently

\* Thomas, *Chronicles*, Pl. VI, fig. 9. The margin clearly gives مَلَاک. A figure with ۛۛ would be desirable, so that the reign of this king might be fixed from 751 to 753.

† It is said in the *Ṭabaqāt i Akbarī*, under Ilyās Shāh, that Fīrūz Shāh's expedition lasted from the 10th Shawwāl, 754, till 11th Rabi' I, 755. As the latter date corresponds to the 5th April 1353, it could only have been *prospect* of the rains, not the setting in of that season, that drove Fīrūz Shāh back to Dihlī. The army, according to Baranī, complained of mosquitos in the vicinity of Paṇḍuah.

The 'Fīrūzpūrabād,' mentioned by Stewart and quoted by Mr. Thomas (p. 264, note 2), where Fīrūz Shāh pitched his camp, should be 'Fīrūzpūr.' The *Riyāz* says—"At a place where now Fīrūzpūr lies (*bojāe kih alyaum Fīrūzpūr ābdāst*, not *Fīrūzpūrdād* ust), Fīrūz Shāh pitched his camp, and starting from that place on horseback laid siege to the fort of Paṇḍuah. In the fort Sultān Shamsuddīn had left his son, whilst he himself had retreated to Fort Ekdālah, which is very strong." The maps show several Fīrūzpūrs round about Gaur; thus two are south of the fort of Gaur.

for the first time, in Tirhut, and was glad in subsequent years to exchange presents with Ilyás Sháh.

As Hájí Ilyás is the legendary founder of Hájípúr, opposite Patna, we may assume that in northern Bihár the Ghandak formed the frontier; in south Bihár, however, the frontier could not have passed beyond Munger, because the inscriptions preserved in the town of Bihár (*vide* below) shew that in 732, 737, 753, 761, 792, and 799, the town of Bihár was under Dihlí governors.

Just as Mubárak Sháh and 'Alí Sháh are called in the histories by their first name, so is Ilyás Sháh also invariably called Sultán Shamsuddín. The name 'Ilyas Khaje,' which Stewart gives, is not to be found in historical works. Stewart also mentions 760 as the year in which Ilyás died, but the histories only mention that his reign lasted sixteen years and some months. In 758, he had for the third time sent ambassadors with presents to Dihlí, and Fírúz returned the compliment by sending him horses; but the Dihlí ambassadors on reaching Bihár heard that Ilyás had in the meantime died. The latest of Mr. Thomas's coins of Ilyás Sháh also bear the year 758.\*

Ilyás Sháh is nicknamed 'Bhangrah,' a corruption, it seems, of the Hindústání *bhangrá*, 'a seller, or eater, of the drug *bháng* (hemp).' Firish-tah says that he does not know the origin of the word; but Ziyá i Baraní evidently knew more about it; for he says, rejoicing in his joke,—“And the well known Bengal Páiks, who for years had borne the name of 'the Bengal Ancients' or 'the Dead,' had taken a quid from Ilyás the Bháng-eater, in order to shew that they were ready to sacrifice their lives for him; and standing in front of the train of that wild maniac, together with the mouldy-looking Bangáli Rájahs, they bravely threw about their arms and legs; but as soon as the battle commenced, they put from fear their fingers into their mouths, gave up standing to attention, threw away swords and arrows, rubbed their foreheads on the ground, and were consumed by the swords of the enemies.” A graphic description, by the way, of the Bengal Military Police in 1353, A. D.

No inscriptions have hitherto turned up that mention Ilyás Sháh; nor does the author of the Riyáz, who had a good personal knowledge of the ruins of Gaur and Panduah, speak of any buildings erected by him. He only says—‘It is said that Sultán Shamsuddín made in Bengal a reservoir in imitation of Hauz i Shamsí at Dihlí.’

\* Reinaud, however, quoted by Marsden (p. 566, note) mentions two Sunnargáon coins of 754 and 760. The MS. of the Riyáz belonging to the Asiatic Society of Bengal mentions 758 as the year in which the last ambassadors left for Dihlí; Stewart has 759; and the Tabaqát and Firishtah, who copies from it, have ‘in the end of 759.’ The earliest coin of Sikandar figured by Mr. Thomas (Journal, As. Soc. of Bengal, 1867, Part I, p. 63, and Pl. II, No. 12) belongs to 761.

Regarding the coinage of Ilyás Sháh, *vide* Thomas, Initial Coinage of Bengal, Journal, As. Soc. Bengal, 1867, pp. 57, 58.

### V. Abul Muja'hid Sikandar Sha'h.

Ilyás Sháh was succeeded by his eldest son Sikandar Sháh. The beginning of his reign was marked by a second attempt\* made by Fírúz Sháh to annex Bengal; but as in the first, Ekdálah held out, and Fírúz returned to Dihli, and never again interfered in Bengal matters.

'In 766,' says the Riyáz,† 'Sikandar commenced to build the Ádínah [*i. e.* Friday] Mosque; but he had not finished it when he died, and the building remained half completed, and now-a-days parts of the edifice may be seen in the jungle near Panduah, about a *kos* from it. I have seen it myself: it is, indeed, a fine mosque and must have cost a great deal of money. May Sikandar's efforts be thankfully remembered!'

According to the same author, Sikandar Sháh died after a reign of nine years and some months—a statement also given in the *Tabaqát*—of wounds which he had received 'on the field of Goálpárah,' fighting with his favourite son Ghiyás, whom the machinations of a jealous step-mother had driven into rebellion.‡

'Sikandar was the contemporary of the revered saint 'Alául Haq.'

Several inscriptions belonging to Sikandar's reign have been found. One of the year 765, from Dínájpúr, was published by me in the Journal for 1872, p. 105. I remarked there on the beauty of its characters; § but the inscriptions inside and outside the Ádínah Mosque, rubbings of which the Society owes to General Cunningham and Mr. W. L. Heeley, are the finest that I have seen. The characters are beautiful, and the rubbings have created sensation wherever I have shewn them. The inscription inside is 13½ ft. long and 1½ ft. broad, but contains only verses from the Qorán [Sur. IX, 18, 19], on the top in Kufic and below in (what people call now-a-days in India)

\* In 760, according to the *Tabaqát* and the *Riyáz*; Stewart has 761. Regarding Fírúz Sháh's desire to reinstate Zafar Khán, Mubarak Sháh's son-in-law, in the government of Sunnárgáon, the cause that led to the expedition, *vide* Dowson, *Elliot's History of India*, III, 30 f, ff.

† Stewart has 763.

‡ Ghiyáz marched with a large army from Sunnárgáon, and pitched his camp at Sunnárgarhi. Stewart has *Sunnárgkof*. From the other side, his father issued forth with a terror-inspiring army, and the next day, on the field of Goálpárah, both parties engaged in deadly strife. The whole story is only to be found in the *Riyáz*.

The Goálpárah meant here is, no doubt, the village quite close to Panduah, S. W. of it. I have not identified Sunnárgarhi.

§ It was written by one Ghiyás. General Cunningham is inclined to think that the Ghiyás is Sikandar's son.

Ṭughrá characters. The stone outside measures 4 ft. 9 in. by 10 in., and its letters are just as beautiful.

No. 8. . *The Sikandar Sháh Inscription, Adínah Mosque, Hazrat Panḍuah, A. H. 770, (vide Pl. V, No. 3).\**

أمر ببناء العمارۃ هذا المسجد الجا ابا ( ؟ ) فی الدولة السلطان الاعظم  
اعلم اعدل اكرم اكمل السلاطين العرب والعجم الوائق بتأيید الرحمن ابو المجاهد  
سكندر شاه سلطان بن الیاس شاه السلطان خلد خلافته الى يوم الموعود  
كتبه فی التاريخ ست رجب سنة سبعین و سبعمایة ۱۱

This.....mosque was ordered to be built in the reign of the great king, the wisest, the justest, the most liberal of the kings of Arabia and Persia, who trusts in the assistance of the Merciful, Abul Mujáhid Sikandar Sháh, the king, son of Ilyás Sháh, the king,—may his reign be perpetuated till the day of promise!

He wrote it on the 6th Rajab of the year 770. [14th February, 1369.]

Neither inscriptions nor coins give Sikandar Sháh a full *julús* name; he only has a *kunya*, Abul Mujáhid. Perhaps it would be going too far in speculations, if I were to say that Ilyás *naturally* called his son Sikandar; but a Muhammadan, on hearing the name of Ilyás, will immediately think of the *áb i hayát*, 'the water of life'; and as Sikandar is the legendary successor of Ilyás (the Prophet Elias) in search of the precious commodity, the name of the father may have suggested that of the son.

As stated above, the histories assign Sikandar Sháh a reign of nine years and some months. Stewart says that he died in 769, a year obtained by adding nine years and a fraction to 760, which he assumes to have been the year in which Ilyás Sháh died. The above Panḍuah inscription extends Sikandar's reign to the latter half of 770, and the coins figured by Mr. Thomas in his 'Initial Coinage' (J. A. S. B., 1867, Pl. II, Nos. 12, 14, and 13) give the dates 761, 782, and 783. But Mr. Thomas also states that among the large number of Sikandarsháhís that passed through his hands, he found coins of almost every year between 750 and 792, with the exception of the years 755, 762, 767, 768, 769, 774, 775, 777, and 778. It thus becomes clear that Sikandar Sháh struck coins as prince. Mr. Thomas also quotes A'zam Sháhí coins of 772, 773, 776, the years when Sikandar's coinage is most interrupted, and again from 790 to 799. Further, we have to remember that the poet Háíz sent the well known ghazal

\* I have elsewhere remarked on the numerous grammatical mistakes in Bengal Arabic Inscriptions. They consist chiefly in wrong articles, mistakes in gender, in oblique cases, and in wrong constructions of the Arabic numerals. In order not to disfigure the text, I shall no more indicate such errors by a (*sic*).



to Ghiyásuddín A'zam Sháh, 'king' of Bengal; and as Háfiz died in 791 (خاك مصلي being the date of his death), the ghazal must have been sent to Bengal during Sikandar Sháh's lifetime. The fact that A'zam Sháh's early coins (of A. H. 772) were struck in Mu'azzamábád (*vide* above), agrees with the statement of the Riyáz that he rebelled in Eastern Bengal, where he remained "nominally subordinate or covertly resistant to paternal authority."\*

## VI. Ghiya'suddi'n Abul Muzaffar A'zam Sha'h.

The only fact given in the *Riyáz* and omitted by Stewart is that "A'zam Sháh was treacherously murdered (*ba-daghá kushlah*) by Rájah Káns "after a reign of seven years and some months,† or, as I have seen in a "little book, after a reign of sixteen years, five months, and three days."

The coins of this king, as mentioned before, go to 799; the latest figured by Mr. Thomas (Initial Coinage of Bengal, Pl. II, No. 15) is of 795.‡ No inscription of this and the following two kings have been found.

\* It is also curious that in the inscription of 777, published by me in this Journal for 1870, p. 292, no king is mentioned, as if it had been doubtful who the real king was.

In order to remove all doubts regarding a confusion of مسيعين and نسعين in the reading of Sikandar's and A'zam Sháh's coins, a few clear drawings of Sikandar Sháh's struck between 783 and 792, and of A'zam Sháh's, struck in 772, 776, 776, would be required. A'zam Sháh's reign, according to the common statement, lasted 7 years, which we certainly get when we subtract 792 (the latest year cited by Mr. Thomas for Sikandar Sháh) from 799 (the latest year cited for A'zam Sháh); but if we take the second statement, given in the *Riyáz*, regarding the length of A'zam Sháh's reign, viz. 16 years, 5 months, and 3 days, and subtract it from 799, we get 783, the year of Mr. Thomas's latest figured coin.

† I. e., according to the wrong chronology of the Tabaqát and the *Riyáz*, in 775.

‡ I may here suggest a few unimportant alterations in Mr. Thomas's readings of A'zam Sháh's coins ('Initial Coinage,' J. A. S. B., 1867, pp. 68 to 70). First, عون الاسلام is to be corrected to غوث الاسلام. Again, the mysterious كين (*loc. cit.*, p. 68) is nothing but زين, *yamín*. Lastly the reverse of coin No. 38 (*loc. cit.*, p. 70), as I see from a specimen in the Society's Coin Cabinet, is

إيد الله دولته و خلد الله ملكه

*May God render his power everlasting, and may God perpetuate his reign,—abbada alláhu, not the name 'Abdullah,—which removes from the mint officials the charge of ignorance. It was only Akbar who, in his hatred of everything that was Arabic, recommended the substitution of Alif for 'Ain, and g for ح, &c.*

In the reverse of the Sikandar Sháhí (*loc. cit.*, p. 64, No. 23), as I also see from a coin in the possession of the Society, there is a wrong Alif before لدين and a و (*waw*) is omitted before *Alqáhiru*,—'Who renders assistance to the religion of God, and who is victorious over the enemies of God.' This cancels the footnote.

**VII. Saifuddi'n Abul Muja'hid Hamzah Sha'h, son of A'zam Sha'h.**

The histories give him the epithet of Sultán ussaláṭīn, and praise him for his virtues. Firishtah says:—"And the Rájahs of the country did not draw their heads out of the yoke of obedience and practised no neglect and delay in paying taxes."

According to the Ṭabaqát, he reigned ten years. But the author of the Riyáz saw "in the little book," that the reign of this king was 3 years, 7 months, and 5 days, which would bring his reign to 802, or 803, A. H.

Marsden has published a coin of this king, without, however, giving the Royal name (Numism., Pl. XXXVII, No. DCCLIV). It follows in appearance the coins of Sikandar Sháh and A'zam Sháh; the margin contains 'Firúzábád,' but no year. The specimen in the cabinet of the Asiatic Society is of very rude manufacture, and has most clumsy letters, especially on the reverse.

*Vide* Pl. VII, No. 1. Silver. Weight, 162.505 grains. A. H. (80)4. (Asiatic Society of Bengal, one specimen.) Rare. Circular areas.

OBVERSE—*الموید بنائید الرحمن سیف الدنیا والدین ابوالجہاد حمزہ شاہ*  
بن اعظمشاہ السلطان

REVERSE—*ناصر الاسلام والمسلمین*

MARGIN—*سنہ اربع*

Assisted by the assistance of the Merciful, Saifuddunyá waddín Abul Mujáhid Hamzah Sháh, son of A'zam Sháh, the king. The helper of Islám and the Muslims \* \* year \* \* 4.

**VIII. Shamsuddi'n ? ? , son of Saifuddi'n Hamzah Sha'h.**

The Ṭabaqát says that this king followed the path of his father, and died after a quiet reign of three years and a few months. Firishtah states that as the king was young and deficient in intellect, an infidel of the name of Káns, who was an Amír of the court, obtained great power and influence, and usurped the executive and the collection of taxes. The Riyáz has the following: "After enjoying himself for some time, he died, in 788, from an illness, or through the foul play of Rájah Káns, who at that time was very powerful. And some writers have asserted that this Shamsuddín was no son of the Sultán ussaláṭīn, but an adopted son (mutabanní), and that his name was Shihábuddín. Anyhow, he reigned 3 years, 4 months, and 6 days. It is clear that Rájah Káns, who was zamíndár of Bhatúriah, rebelled against him, killed him, and usurped the throne."

**THE SAINTS OF GAUR AND HAZRAT PANDUAH.**

Before proceeding in my account of the kings of Bengal, it may be convenient here to collect the information which we possess regarding the

\* I. e., according to the erroneous chronology, he would have died in 785.

Muhammadan saints of Gaur and Panḍuah. Their names often occur in Bengal History, while their dargāhs, as elsewhere, are the natural depositories of inscriptions.

The principal personages of saintly renown are Shaikh Jaláluddín Tabrizí, Shaikh Akhí Sirájuddín 'Usmán, Shaikh 'Aláulhaq, and Núr Quṭb 'Álam.\* All larger works on Muhammadan Saints contain biographical notices of them.

### 1. *Shaikh Jaláluddín Tabrizí.*

He was a pupil of Abú Sa'id Tabrizí and of the renowned Shaikh Shiháb-uddín Suhrawardí. He accompanied the latter on his pilgrimages to Makkah, and used to carry on his head a small oven with the hot pots in which his master kept his food. Numerous miracles are ascribed to him. Among others, he converted, with one look, at Badáon a Hindú milkman to Islám. Though several times charged with immoral practices, he defeated his accusers. When he went to Bengal, he commenced to destroy idols; in fact, his vault occupies the site of an idol temple. He kept a *lungarkhánah*, where he housed and fed beggars and travellers. He died in 642 A. H., or A. D. 1244. The place where he died does not seem to be accurately known. The Mutawallis of the tomb near Gaur say that he died in Aurangábád (the old K'harkí), and that his shrine in Bengal† is a mere *jardáb*, or imitation-vault; but the *Áin i Akbarí* (IVth book) says that he was buried at Bandar Díu Mahall.‡ *Vide* below under Yúsf Sháh.

### 2. *Shaikh Akhí Sirájuddín 'Usmán.*

Siráj came as a boy to Nizámuddín Auliá of Dihlí, who handed him over to Fakhruddín Zarrádí to teach. In course of time, he became very learned, and was told to go to Bengal, where he died in 758, A. H., or 1357, A. D. The *Haft Iqlím* says that Nizám called him 'the mirror of Hindústán,' and that he only received, when advanced in age, proper instruction from Fakhruddín. After Nizám's death, he went to Lak'hnaúti, and all the king became his pupils.

For the inscriptions at his tomb, *vide* below under Husain Sháh.

\* Besides these, the *Riyáz* mentions a Shaikh Rájá Bayábání (died in 754, when Fírúz besieged Ilyás Sháh). Shaikh Hamíd of Nágór, one of Núr Quṭb 'Álam's teachers, belongs to Nágór in Jodhpúr, not to Nágór in Bírghúm, as Stewart says.

† As most Dargāhs in Bengal, Sháh Jalál's tomb is rich. Its lands lie chiefly in Bardwán District, at Bohát, near Maimári, a station on the E. I. Railway. There is a Madrasah and a Sarái in Bohát.

The oven is still shown at the Gaur shrine, and "till three generations back, it cooked rice without fuel."

‡ I. e., either the Maldives, or Díu in Gujarát. *Vide* Dowson, IV, 96, note.

3. *Shaikh 'Aláuddín 'Alá-ulhaq.*

'Alá-ulhaq was the son of Shaikh As'ad of Láhör, and one of the spiritual successors of Shaikh Akhí Sirájuddín 'Usmán. According to the *Ma'árij-ulwilyát*, he was a true Quraishí Háshimí, and traced his descent from Khálid bin Walíd. He was at first exceedingly proud of his origin, wealth, and knowledge, so much so, that Shaikh Akhí complainingly told Nizámuddín Auliá that he was no match for 'Alá-ulhaq. But Nizám told him not to mind it, as 'Alá would in time become his (Akhí's) pupil. It seems that 'Alá in his pride called himself *Ganj i Nabát*,\* and when Nizám heard this, he cursed him, and said, "May God strike him dumb!" The curse instantly took effect; nor was 'Alá-ulhaq's tongue loosed till he became the humble pupil of Shaikh Akhí. As Shaikh Akhí travelled a great deal on horseback, 'Alá-ulhaq accompanied him walking barefoot and carrying his master's pots filled with hot food on his head, till he became quite bald. Nor did he feel concerned when Shaikh Akhí, with a view of humbling him, passed on his journey the houses of his brothers, who were all Amírs and rich men.

Once some travelling faqírs came to 'Alá-ulhaq's cell. One of them had a cat with him;† but whilst in 'Alá's house, the cat was lost. The owner asked the saint to 'make' him a new cat; but when 'Alá said that he did not know from what to make one, he replied, "What do I care from what you make it, make it out of the horn of a stag, if you like." 'Alá was annoyed and said, "You shall feel the horns." Thereupon another of the faqírs, in order to vex the saint, said, "Well, can I make a cat from my testicles?" and 'Alá replied, "There you shall feel it." When the faqírs had left the house, the former was killed by an ox, and the second got an attack of orchitis, of which he died.

'Alá-ulhaq spent large sums in feeding pupils, beggars, and wanderers. But the king of the land got envious, because the public treasury even could not have borne such a heavy expenditure, and he drove the saint to Sunnargáoq. He stayed there for two years, and gave his servants orders to spend twice as much as before. And yet, he only possessed two gardens, the income from which was eight thousand silver tankahs *per annum*; but as he gave a beggar the land as a present, all money must have been supplied him from the unseen world.

\* Faríduddín 'Attár, the great saint of Pák Pañan (Ajodhan) in the Panjáb has the title of *Ganj i Shakar*, 'store of sugar.' But *shakar* may be unrefined, whilst *nabát* is applied to the best refined sugar. 'Alá-ulhaq, therefore, placed himself above Faríd.

† What the dog is to Europeans, is the cat to Indians. To kill or lose a cat is most unlucky.

'Alá-ulhaq died on the 1st Rajab, 800, or 20th March, 1398, and his tomb is at Hazrat Panđuah.

#### 4. *Shaikh Nûruddîn Nûr Quṭb 'Ālam*.

He is the son and spiritual successor of 'Alá-ulhaq. In order early to practise the virtue of humility, he washed the clothes of beggars and wanderers, and kept the water constantly hot for ceremonial ablutions; nay, he even swept the cell of his father and cleaned the privies attached to the house. One day, whilst thus engaged, his pure body was polluted, and his father allowed him to proceed to other work, as woodcutting. He refused the invitation of his worldly brother A'zam Khân, who was the Vazîr at the court of Muhammad Tughluq.\*

Quṭb 'Ālam died in 851, or A. D. 1447, and lies buried at Panđuah. The words *shams ul hidáyat*, 'lamp of guidance,' are the *tárikh* of his death. He was succeeded by his sons Rûf'atuddîn and Shaikh Anwar.

### IX. *Rājah Ka'ns*.

We saw above that Shamsuddîn (II.)—a king whose existence and royal titles have not yet been verified by medallie or mural evidence—was dethroned by Rājah Káns. This Rājah, at the present stage of research, belongs to legends and traditions rather than to authenticated history, there being little else known of him besides the fact that through him the succession of kings of the house of Ilyás Sháh, which had successfully ruled over Bengal for more than fifty years, was broken, and that his son became a Muhammadan.

The remark of the Riyáz regarding Shamsuddîn and the probability that he did not belong to the old dynasty, but was an adopted son and was called *Shihábuddîn*, receives a particular importance from the following coins of a new king, whom I shall now assign, for the first time, I believe, a place in the list of the kings of Bengal. Their manner of execution, which follows closely on that of the coins of preceding kings, and the mint towns mentioned proclaim them to be Bengal coins. The name of the new king is—

#### *Shihabuddîn Abul Muzaffar Ba'yazîd Sháh*.

His coins do not mention the name of his father, and the absence of the usual phrase *ibn ussulţán*, 'son of the king,' indicates that he was either a usurper, in which case 'Báyazîd' might represent the Muhammadan name of Rājah Káns after conversion, or a puppet king, in whose name Rājah Káns reigned and coined in the 'Dáru'l Islám' of Bengal.

If we take the first alternative, we have against it the clear statement of the historians that Káns remained a Hindú, and also the circumstance

\* This is rather early, considering that 752 is Tughluq's last year.

that his son does not mention the name of his father on his coins, which he would scarcely have omitted, if Káns had turned Muhammadan. And if we look upon this Báyzád Sháh as a successful rival of Rájah Káns, we have history and legends against us. Hence the theory of a puppet king—a *benámi* transaction—is perhaps the least objectionable.

1. *Vide* Pl. VIII, No. 2. Silver. Weight, 163·94 grains. A.H. 812. Circular areas. (Asiatic Society of Bengal, one specimen.)

OBVERSE.—المؤيد بنأيد الرحمن شهاب الدنيا والدين ابو المظفر بايزيد شاه السلطان

*Margin.*—Cut away.

REVERSE.—ناصر امير المؤمنين غوث الاسلام والمسلمين خلد ملكه

*Margin.*—ضرب هذه السكة . . . سنة ٨١٢

Assisted by the assistance of the Merciful, Shihábuddunyá waddín Abul Muzaffar Báyzád Sháh, the king.

The helper of the Commander of the Faithful, the aid of Islám and the Muslims, may God perpetuate his reign! This coin was struck \*\*\*\*\* year 812.

2 *Vide* Pl. VIII, No. 3.\* New variety. Silver. Weight, 165·76 grains. Fírúzábád, A. H. 816. (Asiatic Society of Bengal, two specimens.) Rare. The obverse has sixteen convex scollops, and the reverse eight concave ones.

OBVERSE.—As in No. 1.

*Margin.*—Cut away.

REVERSE.—ناصر امير المؤمنين غوث الاسلام والمسلمين

*Margin.*—(ابوبكر) ضرب (عمر) فيروز اعثمان آباد سنة (علي) ٨١٦

In the *Margin*—(Abú Bakr) struck at ('Umar) Fírúz-('Usmán) ábád in the year ('Alí) 816.

Rájah Káns has been identified by Mr. E. V. Westmacott† with Ganesh, Rájah of 'Dyñwaj,' or Dinájpúr. The Riyáz, who appears to have compiled his chapter on this usurper from local traditions, calls him 'Rájah of Bhatúriah.' Whether this name is an ancient one, I cannot say; it does not occur in the *Áin*, nor have I seen it before the time of Rennell's *Atlas*, (1778), in which the name of Bhatúriah is given to a large District east of Máldah, bounded in the west by the Mahánandá River and the Púrna-

\* In the figure of this coin, there is a wrong stroke between the  $\Lambda$  and | in the year.

† *Vide* Calcutta Review, No. CX, October, 1872. Col. Dalton suggests a comparison of the name 'Káns' with 'Kons,' or 'Konch,' the same as Koch (Koch Bihár). Koch is often pronounced with a nasal twang, as if it were spelt Kofis.

It is also curious that a Parganah near Dinájpúr (south-west of it) has the name of 'Bajitpúr,' a well known Bangálí corruption of Báyzád púr, which at once reminds us of Báyzád Sháh. We may attach some significance to this, as the name is evidently old; for the name of this very parganah occurs in the *Áin i Akbari* (my text edition, p. 408, in *Sirkár Panjrah*).

bhaba its tributary, in the south by the left bank of the Ganges, in the east by the Karataya, and in the north by Dinájpúr and G'horág'hát. Bhatú-riah, therefore, is the district to both sides of the Atrai River.

The Tabaqát i Akbari merely states the fact of Káns's usurpation, and assigns him a reign of seven years. Firishtah, who has been followed by Stewart, says that, "though no Muhammadan, he mixed with them and loved them, so much so that some Muhammadans testified to his conversion, and claimed for him a Muhammadan burial. After a vigorous reign of seven years, he went to the world of annihilation, and was succeeded by his son, who had the honor of being converted to Islám."

The Riyáz represents the views of the opponents of the Rájah, and gives the following :—

'When Sultán Shamsuddín died, Rájah Káns, a Hindú zamíndár, seized the whole kingdom of Bengal, and sat proudly on the throne. Oppression and bloodshed followed; he tried to kill all Muhammadans, and had many learned men murdered. In fact, his object was to drive Islám from his kingdom. One day, people say, Shaikh Badr ul Islám, son of Shaikh Mu'inuddín 'Abbás, went to the wicked tyrant, but did not greet him. When the Rájah asked him why he had not saluted him, he replied, "Learned men are not supposed to greet infidels, especially an infidel tyrant, who like thee sheds the blood of Muhammadans." The unclean heretic was silenced, he winced under the reply, and thought of nothing else but to kill the Shaikh. He, therefore, called him one day to a room, the door of which was very low and narrow. But the Shaikh saw through the plan,\* and put his foot first over the threshold, and then entered without bending his head. This annoyed the Rájah so much, that he gave orders to take him to the path of his brethren. The Shaikh was at once executed. All the remaining learned men, on the same day, were put on board a ship and were drowned in the middle of the river.

'The usurpation of this infidel and the slaughter of Muhammadans drove at last the Saint Núr Quṭb ul 'Álam to despair, and he wrote a letter to Sultán Ibráhim i Sharqí (of Jaunpúr), *who at that time had extended his kingdom to the [Eastern] frontier of Bihár*,† complaining of the injustice done to Islám and the Muslims, and asking the king to march against the infidel. Ibráhim received the letter with due humility, and consulted with Qází

\* The Rájah evidently wished the Shaikh to come to him in a stooping position, which might be looked upon as a 'salám'.

† The Jaunpúr kingdom was founded in 796, and Ibráhim Sharqí, the first titular Sultán, reigned from 804 to 844. The faulty chronology of the Tabaqát, Firishtah, and Stewart, makes Rájah Káns die in 794. The story of the Riyáz, therefore, agrees very well with the testimony of coins; but it is strange that the author of the Riyáz did not see the anachronism.

Shihábuddín Jaunpúrí, the chief of the learned of the age, who was allowed at court to sit on a silver chair. The Qází represented the worldly and religious advantages that would flow from a war with the infidel on the one hand, and from a visit to the great saint, on the other. The king, therefore, collected a large army, invaded Bengal, and pitched his camp at Sarái Fírúzpúr. Rájah Káns now applied to Quṭb ul 'Álam, begged to be forgiven, and asked him to intercede on his behalf with the king of Jaunpúr. The saint replied that at the request of an infidel he could not bid a Muhammadan king stop; in fact, he had himself invited the enemy to come. The Rájah placed his head on the feet of the saint, and said, he was willing to perform anything he ordered him to do, whereupon Quṭb ul 'Álam told him that he would not interfere until he was converted to Islám. The Rájah placed the finger of acceptance upon his eye; but the wife of the infidel led him back to perdition, and he evaded conversion. But he took his boy, who was twelve years old and had the name of Jadú, to the saint and said, "I have got old and wish to renounce the world; make this boy a Muhammadan and give him the kingdom of Bengal." Quṭb ul 'Álam, thereupon, put some *pán* which he was chewing, into Jadú's\* mouth, taught him the creed, and thus made him a Muhammadan, giving him the name of Jaláluddín. According to the Rájah's wish, he also sent a proclamation through the town, ordering the people to read the Friday prayer in the name of the new king. The blessed law of the prophet was thus carried out with new vigour. Quṭb ul 'Álam now went to king Ibráhím, and asked him to return. The king looked angrily at Qází Shihábuddín, who said to Quṭb ul 'Álam, "At your request the king has come here, and now you come to him as ambassador to implore his mercy. What shall men think of this?" The saint replied, "When I called you, a tyrant oppressed the faithful; but now, in consequence of your approach, the new ruler has become a Muhammadan; fight with infidels, not with a king that belongs to the Faith." This silenced the Qází; but as the king still looked angry, the Qází had the boldness to enter into a scientific discussion with the saint. After many questions and answers, Quṭb said, "To look on the poor with contempt or entangle them in examinations, brings no man prosperity. Your miserable end is at hand." He then looked even at the Sultán with expressions of anger. Ibráhím now got vexed, and returned with a sorry heart to Jaunpúr. It is said that not long after, Sultán Ibráhím and Qází Shihábuddín died.

'When Rájah Káns heard that Sultán Ibráhím was dead, he deposed Jaláluddín, took again the reins of the government into his own hands, and ruled according to his false tenets. He made several hollow cows of gold, threw Jalál into the mouth of one, and pulled him out behind; the gold

\* As saints do with their pupils, or in order to break the boy's caste.



was then distributed among the Brahmans. He hoped that the boy would thus return to his old faith. But as Jalál had been converted to Islám by a saint like Qutb ul 'Alam, he remained faithful to his new belief, and the talk of the infidels made no impression upon him.

'Rájah Káns now again commenced to persecute the Muhammandans. When the measure of his cruelties was full, Shaikh Anwar, son of Qutb ul 'Alam, said one day to his father, "It is a matter of regret that, with you as guardian saint, the Muhammandans have so much to suffer at the hand of this infidel." The saint was just at his devotions, and angry at the interruption, he exclaimed, "The misery will not cease till thy blood is shed." Anwar knew that whatever his father said, was sure to come true; he, therefore, replied that he was a willing martyr \* \* \*. The oppression of Rájah Káns reached the climax, when he imprisoned Shaikh Anwar and his brother's son Shaikh Záhíd. But as he dared not kill them, he banished them to Sunnárghaon, in the hope that they would confess where Qutb ul 'Alam had buried his money and that of his father. But even though they were sent to Sunnárghaon, and were much threatened, no money was found, because none had ever been buried, and Shaikh Anwar was ordered to be killed. Before his execution, he said that at such and such a place they would find a large pot. People dug and found a large vessel with only one gold coin in it. On being asked what had become of the other money, Anwar replied, "It seems to have been stolen." Anwar, no doubt, said so by inspiration from the unseen world.

'It is said that on the very day on which Shaikh Anwar died, Rájah Káns went from his palace to the infernal regions. But according to the statement of some, he was killed by his son Jaláluddín, who, though in prison, had won over the officers. The oppressive rule of this monster had lasted seven years.'

### **X. Jaláluddín Abul Muzaffar Muhammad Sháh.**

According to the histories, he is the son\* of Rájah Káns. His real name is given in the Riyáz as 'Jadú,' and by Firishtah as 'Jatmall' or 'Jaimall'—the MSS. differ. There is a place J a t m a l l p ú r, a little east of Dínájpúr, and we may assume the first name to be correct. As the coins of Báyzíd Sháh go up to 816, and the coins of Muhammad Sháh commence with 818, the latter year, or 817, must be the beginning of his reign; and if he reigned for seventeen years, as stated in the histories, his reign may have lasted from 818 to 835, which agrees with the year on Marsden's coin

\* Stewart supposes that he was the eldest son of the Rájah by a Muhammandan concubine. According to the *Tabaqát* and *Firishtah*, he reigned seventeen years, and died in 812 A.H. Stewart says, eighteen years.

of his successor Ahmad Sháh (836). General Cunningham tells me that the Bodleian Library at Oxford has a specimen of 831.

1. *Vide* Pl. VIII, No. 4, and Marsden, Numism., Pl. XXXVII, No. DCCLXV. Silver. Weight, 166·89 grains. Mint town ? A.H. 818. (As. Soc. Bengal, one specimen.)

Obverse area, bounded by sixteen convex scollops ; reverse area, a four-leaved shamrock.

OBVERSE.—جلال الدنيا و الدين ابو المظفر محمد شاه السلطان

*Margin*, none.

REVERSE.—ناصر الاسلام و المسلمين خلد ملكه

*Margin*.—ضرب هذه السكة في سنة ٨١٨

Jaláluddunyá waddín Abul Muzaffar Muhammad Sháh, the king. The helper of Islám and of the Muslims,—may his reign be perpetuated ! This coin was struck in.....in the year 818.

Marsden gives this coin as dated 823, but his figure does not shew that year.

2. *Vide* Pl. VIII, No. 5. New variety. Silver. Weight, 165·695 grains. A. H. 818. (As. Soc. Bengal, one specimen). Obverse area as in No. 1 ; reverse, eight concave scollops.

OBVERSE.—السلطان العادل جلال الدنيا و الدين ابو المظفر محمد شاه السلطان

*Margin*, none.

REVERSE.—ناصر امير المؤمنين غوث الاسلام و المسلمين

( ابو بكر ) ضرب ( عمر ) سنة ثمان ( عثمان ) عشر ( على ) ثمانماية

The just king Jaláluddunyá waddín Abul Muzaffar Muhammad Sháh, the helper of the Commander of the Faithful, the aid of Islám and the Muslims. (Abú Bakr) struck (Umar) in the year ('Usmán) eighteen ('Alí) eight hundred [818, A. H.].

3. *Vide* Pl. VIII, No. 6. Silver. Weight, 155·725 grains. Sunnár-gáon (?), A. H. 821. (As. Soc. Bengal, one specimen.) Obverse area, as in No. 1 ; reverse area, a square inscribed in a circle.

OBVERSE and REVERSE, as in No. 1.

*Margin*, ضرب ( سناركانو ) ؟ ٨٢١

During the time of Muhammad Sháh, says the Riyáz, the town of Panđuah became so flourishing, that it cannot be sufficiently described. The king also built a mosque, a reservoir, the Jaláli Tank, and a Sarái in Gaur ; in fact, Gaur also was again during his reign occupied. He reigned for seventeen years. In the year 812 [822], he made the Palace of Gaur his residence. A large dome with his tomb still exists in Panđuah, and the tombs of his wife and his son are at the side of his in the same vault.'

**XI. Shamsuddi'n Abul Muja'hid Ahmad Sha'h.**

Marsden (Numismata, Pl. xxxvii, No. DCLXXIV) has published a silver coin of this king, whom the histories call the son of Muhammad Sháh. The coin bears the clear date 836 A.H. (1432-33, A.D.), and differs from the preceeding Bengal coins by having the Kalimah on one side.\* The Tabaqát merely states that he reigned for sixteen† years, and died in 880 A. H., whilst Firishtah adds that he was a good and liberal king. The Riyáz gives him a different character. 'As Ahmad Sháh was of rough disposition, tyrannical, and blood thirsty, he shed the blood of innocent people, and tore open the bodies of pregnant women. When his cruelty had risen high, and great and small were in despair, Shádi Khán and Náçir Khán, two of his slaves, whom he had raised to the rank of Amírs, made a conspiracy and killed him. This took place in 830, after Ahmad Sháh had reigned sixteen, or, as some say, eighteen, years.'

'Shádi Khán now desired to get rid of Náçir Khán; but Náçir Khán outwitted him, killed him, and issued orders as king. The Amírs and Maliks, however, refused to obey him, and murdered him, after seven days, or, as some say, after twelve hours.'

With Ahmad Sháh ends the dynasty of Rájah Káns. Taking the year 817, the beginning of Muhammad Sháh's reign, as a well attested starting point, and assuming the duration of each reign as given in the histories to be correct, we would get—

	<i>Duration of reign.</i>	<i>Ascertained dates.</i>
Rájah Káns (Báyazid Sháh)	} 817 — 7, or 810 to 817.	Coins of 812 and 816.
Muhammad Sháh,		
Ahmad Sháh,	817 + 17, or 817 to 834.	Coins of 818, 821, 823, 831.
	834 + 16, or 834 to 850.	Coin of 836.

Now above we saw that the last ascertained year for Hamzah Sháh's reign is 804. If we then allow, on the testimony of all histories, above three years to Shamsuddín, son of Saifuddín, we would be brought to the year 808, the commencement of the usurpation of Rájah Káns, and the reckoning, according to the data which we at present possess, is on the whole satisfactory.

The length of Ahmad Sháh's reign only is open to doubt; for if his reign be extended to 850, we are forced to assume that for the greater part of his rule he was vigorously and successfully opposed by Náçiruddín Mahmúd, whose coinage, as will be seen from the following, goes back at least to 846 A. H.

\* The reading of the obverse is—

السلطان الاعظم شمس الدنيا و الدين ابو المجهاد احمد شاه بن محمد شاه السلطان

† Stewart has eighteen.

## RESTORATION OF THE ILYÁS SHA'H DYNASTY.

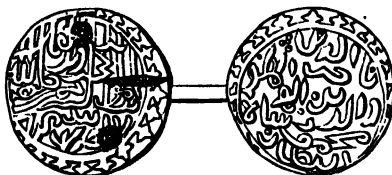
## XII. Na'siruddi'n Abul Muzaffar Mahmúd Sha'h (I).

The histories agree in describing him as a descendant of Ilyás Sháh. He seems to have been supported by the old party who were tired of Ahmad Sháh; old families are said to have gathered round him; and Gaur, the old capital, was rebuilt by him. The wars between Jaunpúr and Dihlí, as Firishtah correctly observes, gave Bengal rest, and Mahmúd Sháh, according to the histories, reigned in peace for thirty-two years, or according to some "not more than twenty-seven years," and died in A. H. 862.

In the histories, he is called by his first name Náqir Sháh, instead of Mahmúd Sháh. Bengal history presents several examples of similar inversions, if the retention of the familiar name of the king can be called so.

The chronology of Mahmúd Sháh's reign has been considerably cleared up by a coin in the possession of Col. H. Hyde, the President of our Society, and by the inscriptions received from General Cunningham and Dr. Wise. The dates now ascertained are 846; 861; 20th Sha'bán, 863; 28th Zil Hajjah, 863. Again, the oldest inscription of Bárbak Sháh, discovered by Mr. E. V. Westmacott, is dated Çafar, 865. We are, therefore, certain that Mahmúd Sháh must have reigned at least till the beginning of 864. But if the second statement of the histories regarding the length of his reign (27 years) be correct, we would get the year 836 as the first year of his reign, the very year in which Marsden's Ahmad Sháhi was struck. This would make Mahmúd Sháh an opposition king for the whole length of Ahmad Sháh's reign, which the histories say was not the case. We require, therefore, more evidence to fix the beginning of Mahmúd's reign.

1. *Coin of Mahmúd Sháh.* New variety. Silver. Weight, 165·08 grains. (Col. H. Hyde.) A. H. 846. No mint-town. The margin contains little crosses.



OBVERSE.—المؤيد بتأييد الرحمن حجت خليفة الله [في الزمان؟] ضرب سنة ٨٤٦

REVERSE.—ناصر الدنيا والدين ابو المظفر محمود شاه السلطان

He who is assisted by the assistance of God, the evidence of the Khalífah of God in this age, Náqiruddunyá waddín Abul Muzaffar Mahmúd Sháh, the king. A. H. 846.

Mahmúd Sháh's coins hitherto published are almost valueless. The cabinet of the Asiatic Society has only one specimen, without date or mint-

town, like No. 8 of Laidley's Plate of Bengal coins (Journal XV, for 1846, Pl. iv). Some have the Muhammadan creed on one side in (so called) Tughrá characters, and, on the other side, the name of the king *Náçirud-dunyá waddin Abul Muzaffar Mahmúd Sháh*. The margin of the specimen is unfortunately cut away. Mr. Laidley's No. 7 has the same obverse; the reverse is the same as on Hamzah Sháh's coins—\*

ناصر امير المؤمنين غوث الاسلام و المسلمين خلد ملكه

But the three inscriptions of this king are very valuable, viz., one from Sátgáon, dated A. H. 861, or 1457 A. D.; one from Dháká, dated 20th Sha'bán, 863, or 13th June, 1459;† and one from Gaur, discovered by General Cunningham, dated 28th Zil Híjjah, 863, or 26th October, 1459.

No. 9. *The Mahmúd Sháh Inscription of Sátgáon* (A. H. 861).‡

قال الله تعالى انما يعمر مساجد الله من آمن بالله و اليوم الآخر و اقام الصلوة  
و اتى الزكوة و لم يخش الا الله فعسى اولئك ان يكونوا من المهتدين  
و قال عز من قائل جل جلاله و عم نواله ان المساجد لله فلا تدعوا مع الله  
احدا و قال النبى صلى الله عليه و سلم و على آله و اصحابه من بنى  
مسجدا لله بنى الله له بيتا فى الجنة \* \* \* \* \* المؤيد بتائيد  
[الرحمن] \* \* \* \* \* بالحجة و البرهان غوث الاسلام و المسلمين  
ناصر الدنيا و الدين ابو المظفر [محمود] د شاه السلطان خلد ملكه و سلطانه  
و اعلى امرة و شانه بناه الخان الاعظم المعظم المكرم المخاطب بخطاب

\* I am doubtful whether Laidley's Nos. 11 and 12 belong to this king. The obverse of No. 11 consists of seven circles, four with 'Náçir Sháh,' and three with 'assultán,' the reverse is illegible. It is unlikely that the king should have called himself Náçir Sháh on some coins, when other coins and all inscriptions give his royal name 'Mahmúd Sháh.' Laidley's No. 12 is curious; it shows on the reverse the *kalimah* in clumsy Kufic characters, and on the obverse five circles with 'Mahmúd Sháh assultán.' In the centre of the piece are three rings, thus—°.°. Three rings thus arranged are Timur's arms; vide Vambéry's Bokhara, p. 205.

† Received from Dr. J. Wise. It was published in Journal, As. Soc. Bengal, 1872, Part I, p. 108.

‡ This inscription was first published by me in Journal, As. Soc. Bengal, for 1870, Part I, p. 293, where notes will be found on the locality. The name 'Mahmúd' is broken away, only the *dál* is left, which in 1870, when I copied the inscription from the stone, I mistook for a *nán*. General Cunningham's rubbing leaves no doubt that it is a *dál*. I therefore republish the inscription with this important correction.

تربيت خان سلمه الله تعالى عن آفات آخر الزمان بمنه وكمال كرمه في  
سفة الخادى و ستين و ثمانماية ۱۱

God Almighty says, 'Surely he builds the mosques of God who believes in God and the last day, and establishes the prayer, and offers the legal alms, and fears no one except God. It is they that perhaps belong to such as are guided. And how beautifully does He whose glory shines forth and whose benefits are general, say, 'Surely the mosques belong to God, do not call on any other besides Allah.' And the Prophet says,—may God's blessing rest upon him and upon his house and his companions!—'He who builds a mosque for God, will have a house built for him by God in Paradise.'

\*\*\* by him who is assisted by the help of the Merciful, \*\*\* by proof and evidence, the help of Islām and the Muslims, Nāḡiruddunyā waddīn Abul Muzaḡḡar [Mahmūd Shāh, the king,—may God perpetuate his kingdom and his rule and elevate his condition! It was built by the great Khān, the exalted, the liberal, who has the title of Tarbiyat Khān—may God Almighty protect him from the evils of the end of time by His grace and the perfection of His mercy! In the year 861. [A. D. 1457.]

No. 10. *The Mahmūd Shāh Inscription of Hazrat Panḡuah*, (Pl. V, No. 4).

General Cunningham found this inscription at the Chhoṭā Dargāh in Panḡuah.

قال الله تعالى كل نفس ذائقة الموت وقال الله تعالى ان جاء اجلهم  
فلا يستأخرون ساعة ولا يستقدمون \* قال الله تعالى كل من عايها فان  
ويبقى وجه ربك ذو الجلال والاکرام \* وانتقال مخدمونا العلامة استاد  
الائمة برهان الامة شمس الملة حجة الاسلام والمسلمين نافع الفقراء والمساكين  
مرشد الواصلين والمسترشدين من دار الفناء الى دار البقاء الثامن والعشرين  
من ذى الحجة في يوم الاثنين وكان ذلك من السنة الثامن والستين  
و ثمانماية في عهد سلطان السلاطين حامى بلاد اهل اسلام و المسلمين  
ناصر الدنيا والدين ابوالمظفر محمود شاه سلطان صانه الله بالامن والامان  
وبنى هذا الروضة خان الاعظم لطيف خان سلمه من البليات والآفات ۱۱

God Almighty says, 'Every creature tasteth death' (Qor., III, 182). He also says, 'When their fate comes, they cannot delay it an hour, nor anticipate it' (Qor., X, 50). He also says, 'Everything on earth fadeth, but the face of Thy Lord remaineth full of glory and honor.'

Our revered master, the teacher of Imáms, the proof of the congregation, the sun of the Faith, the testimony of Islám and of the Muslims, who bestowed advantages upon the poor and the indigent, the guide of saints and of such as wish to be guided, passed away from this transient world to the everlasting mansion, on the 28th Zil Híjjah, a Monday, of the year 863, during the reign of the king of kings, the protector of the countries of the Faithful, Náqiruddunyá waddín Abul Muza'ffar Mahmúd Sháh, the king,—may God keep him in safety and security! This tomb was erected by the great Khán, Latíf Khán,—may God protect him against evils and misfortunes!

### XIII. Ruknuddín Abul Muja'hid Ba'rbak Sha'h.

The histories agree in calling him the son of Náqir Sháh, *i. e.*, Mahmúd Sháh, and in assigning him a reign of seventeen years. The Riyáz says, seventeen, *or sixteen*; and the latter statement is evidently nearer the truth, as by the preceding inscription Bárbak cannot have commenced to reign before 864.

To judge from the Tribeni inscription published by me in this Journal for 1870, p. 290, it would appear that Bárbak as prince was governor of south-western Bengal in 860; but the inscription styles him 'Malik,' not 'Sultán,' from which it is clear that he was no rebel.

The following inscription, which Mr. E. V. Westmacott found in Dínájpúr, is very valuable, as it proves that Bárbak was king in the very beginning of 865.

#### No. 11. *The Bárbak Sháh Inscription of Dínájpúr.*

بسم الله الرحمن الرحيم • نصر من الله وفتح قريب و بشر المؤمنين \*  
 فالله خير حافظا و هو ارحم الراحمين  
 بناء المسجد فى العهد السلطان ابن سلطان ركن الدنيا و الدين ابو  
 المجاهد باركشاه سلطان ابن محمود شاه سلطان خلد الله ملكه و سلطانه  
 بحكم اشارة خان اعظم و خاقان معظم بهلوى العصر و الزمان ائق اقرار ( ؟ )  
 خان سرلشكرو وزير بانى خير مسجد مذکور و مرمّت كرده روضه خان اعظم  
 و خاقان معظم ائق نصرت خان جنگدار و شقदार معاملات جور و برور  
 و محلهاء ديگر فى التاريخ السادس و عشر من الشهر الصفّر ختمه الله  
 بالخير و الظفر شهر سنة خمس و ستين و ثمانماية ١١

In the name of God the merciful and the clement! A victory from God and a near success, and announce it to the Faithful (Qor. LXI, 18). God is excellent as a protector, and He is the most merciful of the merciful (Qor. XII, 64).

The building of this mosque (took place) in the reign of the king, the son of a king, Ruknuddunyá waddín Abul Mujáhid Bárbak Sháh, the king, son of Mahmúd Sháh, the king,—may God continue his kingdom and rule!—by the direction of the great Khán, the noble chief, the hero of the age and the period, Ulugh Iqrár (?) Khán, commander and wazír, builder of this religious edifice, the said mosque. And the repairer of the tomb (is) the great Khán and noble chief Ulugh Nuqrát Khán, the jangdár and shiqdár of the affairs of Jor and Barúr and of other Mahallahs. Dated, the 16th day of the month of Safar,—may God bring it to a happy and successful end!—of the year 865. (1st December, 1460, A. D.)\*

*Note on a Bárbak Sháh Inscription from Dindájpúr.*—By E. VESSEY WESTMACOTT, Esq., C. S.

‘I send a rubbing of an inscription of the reign of Barbak Shah, A. H. 865. It states him to have been the son of Mahmood Shah, a point upon which a bit of additional evidence is not without value. It is very clearly cut on the usual black stone, which is commonly called basalt, but which is more like a slate. In one place I found the surface flaking off, and so brittle, that I was afraid to clear it of the whitewash, with which it was clogged, as thoroughly as I should have liked. The slab is about twenty-two inches by ten, and the inscription is in five lines.

‘It is let into the eastern front of a little brick-built mosque adjoining the grave of Chihil Ghazee, the ‘Peer, mentioned by Dr. Buchanan in his report on Dinagepore, p. 29. The grave, surrounded by an iron railing, is 54 feet long, and is supposed to correspond to the stature of the saint. It is on the north side of the path up to the mosque, some hundred yards to the west of the Darjeeling road, four miles north of Dinagepore, and not far from the Gopalgunge temples. The Mootawallee is a very ignorant fellow, and I have found out nothing of the Peer beyond his name.

‘The founder of the mosque was “Shikdár of the affairs of Baroor,” and of another place. Baroor I take to be the parganah of that name, now in Poorniah, outside the western border of Dinagepore.

‘On each side of the inscription has been let into the wall a stud, or circular piece, of the same stone, which have on the right side of each a groove, as if for a clamp, which makes me think they were not originally cut for their present position. They are about eight inches in diameter. The centre of each bears in ‘Tughra the *muhr i nubuwat* or ‘seal of prophethship,’ surrounding this is an inscription of which I send rubbings, but which neither the Moulawi nor I can decipher. In an outer ring, half an inch lower, the northern stone bears the inscription—

\* I take this opportunity to correct the wrong reading of a title in the Bárbak Sháh Inscription published by me in this Journal, for 1870, Pt. I., p. 290, Inscr. VII., where for جامداد غيّر محلي I should have read جامداد غيّر محلي *jámadár i ghair i mahallí*, as explained in Journal for 1872, Pt. I., p. 106.



این نقشه مهر نبوت که در میان دو شانه مبارک محمد مصطفی صلی  
الله علیه و سلم بود ۱۱

This is the picture of the seal of prophetship which was between the two shoulders of Muhammad Muṣṭafā—may God bless him!

‘As door steps to the mosque and to the enclosure surrounding the grave are pieces of hewn stone, similar pieces lying close by; they are more or less carved and appear to be parts of doorways. Such stones are common in all parts of the district, and are said by tradition to have been brought from Bannagar, near Debkot. They are similar to the remains of Gour and Poroowa [Paṇḍuah]. On the south side of the path is the female portion of a *ling*, of large size, a queer ornament for the premises of a Mahomedan saint.

‘The mosque is somewhat ruinous, the roots of plants are tearing it in pieces. I think that it is of greater antiquity than most in the district, from the strength of the brick arches, the workmanship of the dome, and the fact that the hewn stones which are built into the inner side of each archway, have been cut to fit their places, although bearing marks of clamps to show they have been taken from another building.

‘Three archways, twenty-eight inches wide and nearly six feet high, lead into a vestibule twelve feet by five and a half, at each end of which a similar archway opens to the north and south. Three more archways lead into a chamber, twelve feet square, surmounted by a dome, now cracked in several directions. In the west wall are three niches, and two small archways on the north and south lead into the open air. On the inner side of each of the ten archways, a little below the spiring of the arches, hewn stones, six or eight inches thick, are carried through the whole thickness of the wall which is three feet through. It is unusual in Dinagepore to find that the workmen have dressed the stone as they have here.

‘It is usual to build them in just as they are, often with most incongruous Hindoo carvings upon them.’

Regarding the “seal of prophetship,” it is said in the *Madārij-unnubuwwat* by ‘Abdul Haq of Dihlī, that the seal between the shoulders of the Prophet was a thing raised above the surrounding parts of his blessed body, resembling the body in colour, smoothness, and brightness. And it is stated in the *Mustadrak* that Wahb ibn Munabbih said that no prophet was sent on earth that had not the sign of prophetship on his right hand, except the Prophet, who had the sign between the shoulders. Shaikh Ibn Hajar in his commentary to the *Mishkāt* says that the seal contained the words *والله وحده لا شريك له توجّه حيث كنت فانك منصور*, “and God is one, He has no associate; pay attention wherever thou art, for thou art victorious.”

Some traditions say that the seal was of light, and others, that it vanished from the skin when the Prophet expired, so much so that people knew by its disappearance that the prophet was really dead. Several authorities compare the seal to the egg of a pigeon: some call it *غدة حمراء*, 'a red fleshknot,' and others say that it was a wart covered with hair.

Marsden gives a Bárbak coin which clearly shews the year 873.\* The cabinet of the Asiatic Society of Bengal contains the following:—

1. *Vide* Pl. IX, No. 7. New variety. Silver. Weight 164·025 grains. (Asiatic Society's Cabinet.) A specimen in the possession of Bábu Rájendralála Mitra weighs 164·335 grains.

OBVERSE.— \* \* \* لا اله الا الله محمد رسول الله السلطان العالم العادل

REVERSE.— • • الاعظم المعظم باريكشاه السلطان بن محمود شاه السلطان

Neither of these coins give Bárbak's full name.

#### XIV. Shamsuddi'n Abul Muzaffar Yu'suf Sha'h, son of Bárbak Sháh.

Firishtah represents him as a learned man, who, after his accession charged the 'Ulamá to see the law of the Prophet carried out. 'No one dared drink wine.'

The histories assign him a reign of seven years and six months, and say that he died in 887. If so, the end of his reign was marked by a successful rebellion of his uncle Fath Sháh; but it is just as likely that Yúsuf died early in 886.

Marsden has a coin of this king without year, and Laidley gives a new variety of 884.† General Cunningham's inscriptions give the following dates—

1. Panduah, 1st Muharram, 882, or 15th April, 1477.
2. Hazrat Panduah, 20th Rajab, 884, or 8th October, 1479.
3. Gaur, 10th Ramazán, 885, or 13th November, 1480.

No. 12. *The Yúsuf Sháh Inscription of Panduah, Huglí District.*‡

(Pl. VI, No. 1.) A. H. 882.

قال الله تعالى ان المساجد لله فلا تدعوا مع الله احدا و قتل عليه السلام  
من بنى مسجدا في الدنيا بنى الله له في الآخرة سبعين قصرا • بنى  
المسجد في عهد السلطان الزمان المويّد بتأييد الديّان خليفة الله بالحجة

\* *Vide* also Journal, As. Soc. Bengal, 1870, Part I., p. 299, note.

† Bábu Rájendralála Mitra has a specimen (like Laidley's) of 883 خزانة. The margin, similarly to Fath Sháh's coins, contains shamrocks separated by dots. Weight 168·65 grains.

‡ *Vide*, Journal, As. Socy., Bengal, 1870, Pt. I., p. 300.

و البرهان السلطان ابن السلطان ابن السلطان شمس الدنيا و الدين  
ابو المظفر يوسف شاه السلطان ابن بابيكشاه. السلطان ابن محمود شاه  
السلطان خلد الله ملكه و سلطانه بني هذا المسجد المجاس المجاس  
مجلس معظم المكرم صاحب السيف و القلم پهلو العصر و الزمان الخ  
مجلس اعظم ساه الله تعالى في الدارين مؤرخا في اليوم الرابع الغرة  
من شهر محرم سنة اثنى و ثمانين و ثمانماية و تم بالخير !!

God Almighty says—'Surely the mosques belong to God. Do not call on any one besides Allah. And he upon whom God's blessing rest, says, 'He who builds a mosque in the world, will have seventy castles built for him by God in the next world.' This mosque was built during the reign of the king of the age, who is assisted by the assistance of the Supreme Judge, the viceroy of God by proof and evidence, the king, the son of a king who was the son of a king, Shamsuddunyá waddín Abul Muza'ffar Yúsuf Sháh, the king, son of Bárbak Sháh, the king, son of Mahmúd Sháh, the king—may God perpetuate his kingdom and rule! The mosque was built by the Majlis ul Majális, the great and liberal Majlis, the lord of the sword and the pen, the hero of the age and the period, Ulugh Majlis i A'zam—may God Almighty protect him in both worlds!

Dated Wednesday, 1st Muharram, 882. Let it end well!

No. 13. *The Yúsuf Sháh Inscription of Hazrat Panḍuah.* A.H. 885.

قال النبى صلى الله عليه و سلم من بني مسجدا لله بني الله له تصرا  
في الجنة \* بنى هذا المسجد فى زمن السلطان العادل البازل شمس  
الدنيا و الدين ابو المظفر يوسف شاه السلطان بن بابيك شاه السلطان بن  
محمود شاه السلطان خلد الله ملكه و سلطانه مجلس المجاس مجلس  
اعلى اعلاه الله تعالى شانه فى الدارين و كان ذلك فى التاريخ هجرة  
النبي صلى الله عليه و سلم فى يوم الجمعة عشرين شهر رجب رجب قدرة  
سنة اربع و ثمانين و ثمانماية !!

The Prophet (may God's blessing rest upon him!) says, 'He who builds a mosque for God, shall have a castle built for him by God in Paradise.' This mosque was built in the reign of the just and liberal king Shamsuddunyá waddín Abul Muza'ffar Yúsuf Sháh, the king, son of Bárbak Sháh, the king, son of Mahmúd Sháh, the king,—may God perpetuate his kingdom and rule!—by the Majlis ul Majális, the exalted Majlis,—may God whose dignity is exalted also exalt him in both worlds! And this took place on Friday, the 20th Rajab (may the dignity of the month increase!) of the year 884, according to the era of the flight of the Prophet, upon whom God's blessing rest!

No. 14. *The Yúsf Sháh Inscription of Gaur.* A.H. 885.

قال النبى صلى الله عليه و سلم من بنى مسجدا لله بنى الله  
تعالى له سبعين قصرا فى الجنة \* بنى هذا المسجد فى عهد السلطان  
ابن السلطان بن السلطان بارك شاه السلطان بن محمود شاه السلطان \*  
بنى هذا المسجد خان اعظم و خاقان معظم \* \* \* بتاريخ دهم ماه مبارك  
رمضان سنة خمس و ثمانين و ثمانماية ||

The Prophet, &c. &c., [as before]. This mosque was built in the reign of the king, the son of a king who was the son of a king, Shamsuddunyá waddín Abul Muza'far Yúsf Sháh, the king, son of Bárbak Sháh, the king, son of Mahmúd Sháh, the king. The mosque was built by the great Khán, the exalted Kháqán, \* \* \* \* [not legible.]

Dated, the 10th day of the blessed month of Ramazán, 885.

A rubbing of another Yúsf Sháhí Inscription has been received from Dr. J. Wise. Dr. Wise says—"The inscription is from one of the four mosques which surround the tomb of Sháh Jalál at Silhaṭ. It is a fine *Tughrá* inscription, but unfortunately one-third of it has been built into the masonry, the slab forming the lintel of the door!"

The inscription is—

No. 15. *The Yúsf Sháh Inscription of Silhaṭ.*

\*\*\* ابو المظفر يوسف شاه ابن بارك شاه السلطان ابن محمود شاه  
السلطان خلد الله ملكه و سلطانه و باني هذا المسجد المجلس الاعظم  
المعظم الدستور الساعي في الخيرات و المبرات المجلس الاعلى حفظ الله  
- تعالى عن الآفات \*\*\*

\*\*\*\* Abul Muza'far Yúsf Sháh, son of Bárbak Sháh, the king, son of Mahmúd Sháh, the king—may God perpetuate his rule and kingdom! And the builder is the great and exalted Majlis, the wazír (*dastúr*), who exerts himself in good deeds and pious acts, the Majlis i A'lá—may God preserve him against the evils and \* \*

To judge from Dr. Wise's rubbing, the inscription, in point of beauty, ranges immediately after the Sikandar Sháh inscription No. 8, mentioned above, and it would be well, if the *Sar i qaum*, 'the head of the clan,' as the Mutawallí of the tomb is called, would take steps to have this beautiful inscription taken out of the masonry, and thus restore it to light and history.

Dr. Wise has also sent the following interesting note on Sháh Jalál.

*Note on Sháh Jalál, the patron saint of Silhat.*—By DR. J. WISE,  
ДИА'КА.

The following abridgment of the life and miraculous adventures of Sháh Jalál, the conqueror of Silhat in the 14th century, is taken from the Suhail-i-Yaman, written by Náçiruddín, late Munçif of Silhat; his work was composed in the year 1859. It is an abstract of two earlier histories, one of which is called the "Risálah of Muhi-uddín Khádim;" the other, by an unknown author, is designated the "Rauzatus-Salátín.'

According to the Munçif, Sháh Jalál Mujarrid Yamaní was the son of a distinguished saint, whose title of Shaikhush-Shuyúkh is still preserved. He belonged to the Quraish tribe. Sháh Jalál's father was named Muhammad; his grandfather Muhammad Ibráhím. His mother was a Sayyidah. She died within three months of the birth of this her only son. His father died fighting in a *jihád* against the infidels.

The youth was adopted by his maternal uncle Sayyid Ahmad Kabír Suhrwardí, a Darwish of no mean accomplishments, who had studied under the renowned Sháh Jalál ud-dín Bukhárí.

For thirty years Sháh Jalál is said to have lived in a cave without crossing the threshold. He was at last summoned from his seclusion by his uncle, owing to the following circumstance. One day seated in front of his house at Makkah, lost in contemplation, Sayyid Ahmad saw a doe big with young approach him. The doe related how a lion had appeared in the wood in which she lived, and was killing all her comrades. She finally requested him to come and drive away the brute. Sháh Jalál was called forth from his cave, and directed to go and turn out the lion. On the way he puzzled himself what was to be done when the lion was seen. Unexpectedly, however, he met the animal, and the lustre which shot from his eye was so dazzling, that the lion fled and was heard of no more.

On his return, Sayyid Ahmad was so pleased with his behaviour, that he gave him a handful of earth and told him to go forth and wander over the world, until he found earth of similar colour and smell. Where he did, he was there to make his abode.

Hindústán was then the land to which adventurers directed their steps, and Sháh Jalál followed their example. He passed by a city of Yaman, the king of which was informed that a great Darwish was near. He accordingly sent a cup of deadly poison instead of sharbat, to test his power. Sháh Jalál at once divined its nature, and informed the king's messengers that the instant the draught was swallowed, the king would die. The poison was quaffed without injury to the saint, but, as foretold, the king died.

Sháh Jalál proceeded on his course, but four days afterwards he was overtaken by the Sháhzádah, who had determined on leaving his kingdom and on following the saint in his wanderings.

After journeying for many days, they arrived at Dihlí, where the celebrated Nizám-uddín Auliya then resided. When Sháh Jalál entered the city, Nizám-uddín was sensible of the arrival of a saint. He, therefore, sent messengers to search for him and to invite him to come and eat with him. Sháh Jalál accepted the invitation and gave the messengers a bottle filled with cotton, in the centre of which he placed a live coal. The receipt of this wonderful bottle satisfied Nizám-uddín that this was no common Darwish. He accordingly treated him with every honour, and on his departure he gave him a pair of black pigeons.

The narrative is now transferred to Silhaṭ. In a Mahallah of that city, called Tol-takar, resided at this period Shaikh Burhán-uddín. How a Muhammadan got there, or what he was doing so far away from his own countrymen, puzzles Muhi-uddín, who thinks that this solitary believer must have belonged to some Hindú family, and that he could not have been a true Muhammadan. Burhán, the story goes, had made a vow, that if he was blessed with a son, he would sacrifice a cow. A son being born, he performed his vow; but as bad luck would have it, a kite carried off a portion of the flesh and dropped it in the house of a Brahman. The incensed Brahman went to Gaur Gobind, the king of Silhaṭ, and complained. The king sent for Burhán and the child; and on the former confessing that he had killed a cow, the child was ordered to be put to death, and the right hand of the father cut off.

Burhán-uddín left Silhaṭ and proceeded to the court of Gaur. The king on hearing of what had occurred, ordered his nephew (*bhánjá*) Sultán Sikandar, to march at once towards the Brahmaputra and Sunnárghaon with an army.

When news reached Silhaṭ that an army was approaching, Gaur Gobind, who was a powerful magician, assembled a host of devils and sent them against the invaders. In the battle that ensued, the Muhammadans were routed, and Sultán Sikandar with Burhán-uddín fled. The Prince wrote to his uncle, informing him of the defeat and of the difficulties met with in waging war against such foes. The monarch on receiving the news, gathered together the astrologers, and conjurers, and ordered them to prophesy what success would attend a new campaign. Their reply was encouraging, and Naqir-uddín Sipahsálár was directed to march with a force to the assistance of Sultán Sikandar. This re-inforcement, however, did not restore courage to the Muhammadan soldiery, and it was decided to consult with Sháh Jalál, who with 360 Darwishes was waging war on his own account with the infidels. The Sultán and Naqiruddín proceeded to the camp of the saints,

where the Sháh encouraged them by repeating a certain prayer, and promised to join their army and annihilate the hitherto victorious army of devils. Along with the Sháh were Sayyid Muhammad Kabir, Sayyid Háji Ahmad Sání, Shaikh Abul Muzaffar, Qází Aminuddín Muhammad, Sháhzádah Yamání, &c., &c.

The advance of this army of saints was irresistible. The devils could not prevail against them, and Gaur Gobind, driven from one position to another, at last sought refuge in a seven-storied temple in Silhat, which had been built by magic. The invaders encompassed this temple, and Sháh Jalál prayed all day long. His prayers were so effective, that each day one of the stories fell in, and, on the fourth day, Gaur Gobind yielded on the promise of being allowed to leave the country.

The terms agreed to, Gaur Gobind retired to the mountains (*kohistán*). While at his protracted prayers, Sháh Jalál discovered that the earth on which he was kneeling was of the same colour and smell as that given him by the Makkah Darwish. He, therefore, determined on establishing his abode there. With him remained Sháhzádah Yamání, Háji Yúsuf, and Háji Khalíl. The rest of the saints retired with the army.

The remainder of Sháh Jalál's life was spent in devotion and in miraculous actions which still live in the traditions of the people. It is believed that Sháh Jalál never looked on the face of woman. One day, however, standing on the bank of a stream, he saw one bathing. In his simplicity, he asked what strange creature it was. On being informed, he was enraged, and prayed that the water might rise and drown her. He had no sooner expressed this wish than the water rose and drowned her. Other less questionable actions are related regarding him. For instance, he caused the corpse of Naqir-uddín Sipahsálár, who died at Silhat, to disappear from a Mosque, while the friends were mourning over it. On another occasion he wished that a fountain like the holy Zamzam of Makkah might spring up near his abode, and immediately the fountain appeared.

Shah Jalál was translated (*intiqaál*) the 20th of the "Kali Chand," A. H., 591, in the 62nd year of his age.

Dr. Wise also writes—"It is a curious fact that the Sháh is invoked by the Silhat *gánjah* (hemp) smokers. I have got a Silhat lunatic, who every day before smoking his *chillum* of tobacco invokes the saint in the following manner:—

*Ho! Bisheshwar Lál,  
Tin lák'h Pír Sháh Jalál,  
Ek bár, dubárá, Jagannath jí ká piyára  
Kháne ká dúdh bhát, bajáne ko doitrá.*

The chronology of the 'Life of Sháh Jalál,' as Dr. Wise observes, is confused. His death is put down as having occurred in 591, A.H., and he said to have visited Nizámuddín Auliá, who died in 725, A. H. Again, according to the legends still preserved in Silhaṭ, the district was wrested from Gaur Govind, the last king of Silhaṭ, by king Shamsuddín in 1384 A. D., or 786 A. H., during the reign of Sikandar Sháh, whilst 'king Shamsuddín' can only refer to Shamsuddín Ilyás Sháh, Sikandar's father.

Dr. Wise also draws attention to the statement made by Ibn Baṭúṭah who "from Sadkáwán [Chátgáon] travelled for the mountains of Kámrú [Kámrúp, western Asám]. \* \* His object in visiting these mountains was to meet one of the saints, namely, Shaikh Jalál uddín of Tabriz."\* Jalál then gives him a garment for another saint 'Burhán uddín,' whom Ibn Baṭúṭah visits in Khánbálík (Pekin). Ibn Baṭúṭah, as remarked above, was in Eastern Bengal, when Fakhruddín was king (739 to 750, A. H.). But here again the confusion of dates and names is very great. Jalál uddín of Tabriz died, as we saw above, in 642, and the Silhaṭ Jalál is represented as a man from Yaman.† Neither Jalál nor Burhánuddín is mentioned in the biographical works of Muhammadan Saints.

#### XV. Sikandar Sha'h II.

The Riyáz says that this king was the son of Yúsuf Sháh; the other histories say nothing regarding his relationship. Stewart calls him "a youth of the royal family," but afterwards calls Fath Sháh his "uncle." The Riyáz says that he was deposed on the same day on which he was raised to the throne; the *Ain i Akbari* gives him half a day; my MS. of the *Tabaqát*, two and a half days; *Firishtah* mentions no time; and Stewart gives him two months.

#### XVI. Jalaluddi'n Abul Muzaffar Fath Sha'h, son of Mahmúd Sháh.

Fath Sháh was raised to the throne, as "Sikandar Sháh did not possess the necessary qualifications." The histories say that his reign lasted from 887 to 896, A. H., and yet, they only give him seven years and five months (Stewart, seven years and six months). The inscriptions and coins, however, given below show that he reigned in 886; and if the "seven years and five months" are correct, Fath Sháh could only have reigned till 892 or 893, which agrees with the fact that his successor Firúz Sháh II. issued coins in 893. Fath Sháh was murdered at the instigation of the Eunuch Bárbak.

Laidley has published two silver coins of this king, of which one seems to have been struck at Fathábád in 892. The following is a new variety.‡

\* Lee, Ibn Baṭúṭah, p. 195.

† *Vide* the Silhaṭ Inscription of 1505, given below under Husain Sháh.

‡ The coin given by Marsden as a Fath Sháhí does not belong to this king.



1. *Vide* Pl. IX, No. 8. Silver. Weight, 158·65 grains. *Fathábád*, A. H. 886. (As. Soc. of Bengal, one specimen.) Circular areas. The margin consists of ornamental designs, resembling the niches in mosques and rosettes.

OBVERSE.—جلال الدنيا والدين ابوالمظفر فتحشاه سلطان

REVERSE.—ابن محمود شاه السلطان مجده الله الفتح فتحاباد ٨٨٦

Jaláluddunyá waddín Abul Muzaffar Fath Sháh Sultán, son of Mahmúd Sháh, the king—may God strengthen him with victory! *Fathábád*, 886.

The following five inscriptions of this king have been received by the Society—

1. *Dháká*, 1st Zil Qa'dah, 886, or 2nd January, 1482.
2. *Dhámraí*, 10th Jumáda I., 887, or 27th June, 1482. Published, J. A. S. B., 1872, p. 109.
3. *Bikrampur*, middle of Rajab, 888, or August, 1483.
4. *Sunnárgaon*, Muharram, 889, or beginning of A. D. 1484.
5. *Sátgaon*, 4th Muharram, 892, or 1st January, 1487. Published, J. A. S. B., Pt. I, 1870, p. 294.

No. 16. *The Fath Sháh Inscription of Bandar, near Dháká.*

A. H. 886. (Pl. VII, No. 1.)

The Society is indebted to Dr. J. Wise for this important inscription, regarding which he writes as follows—"The inscription was found on an old Masjid at Bandar, on the banks of a K'hál called Tribení, opposite Khizrpúr (Dháká). This K'hál was in former days the junction of the Brahmaputra, Lak'hya, and Gangus. At its opening on the left bank of the Lak'hya, a fort still stands, said to have been built by Mír Jumlah [*vide* Journal, As. Soc., Bengal, 1872, Pt. I, p. 96]. The place called Bandar is now a mile inland (*vide* Pl. IV), but during the height of the rains, the K'hál is navigable for native boats. The inscription is the most perfect as yet met with in this District."

قال الله تعالي وآن المساجد لله فلا تدعوا مع الله احدا • قال النبي  
صلي الله عليه وسلم من بنى مسجدا بنى الله له قسرا في الجنة •  
بنى هذا المسجد المبارك الملك المعظم بابا صالح في زمان السلطان  
ابن السلطان جلال الدنيا والدين ابوالمظفر فتح شاه السلطان ابن محمود  
شاه السلطان خلف الله ملكه و سلطانه في تاريخ اول شهر ذى القعدة سنة  
ست و ثمانين و ثمانماية من الهجرة النبوية ١١

God Almighty says, 'The mosques belong to God. Do not associate any one with God.' The Prophet, may God bless him!—says, 'He who builds a mosque, will have a castle built for him by God in Paradise.'

This auspicious mosque was built by the great Malik Bá bá Sálíh in the reign of the king, the son of the king, Jaláuddunyá waddín Abul Muza'ffar Fath Sháh, son of Mahmúd Sháh, the king—may God perpetuate his kingdom and rule!—on the 1st Zil Qa'dah, 886, A. H. (2nd January, 1482, A. D.).

The builder of the mosque appears to have been a very pious man. Three miles west from Sunnárghaon, Dr. J. Wise discovered a mosque built by the same man, and adjoining the mosque his tomb. The masjid is within half a mile of the mosque to which the preceding inscription belongs, and was built in 911, A.H. A portion of the date of the inscription is designedly, as it would appear, chipped off.

No. 17. *The Bá bá Sálíh Inscription of Sunnárghaon.*

قال الله تبارك وتعالى وان المساجد لله فلا تدعوا مع الله احدا بني هذا  
المسجد المبارك في زمن السلطان علاؤ الدنيا والدين ابو المظفر حسين  
شاه السلطان خلد الله ملكه الملك المعظم المكرم خادم النبي حاجي  
الحرمين وزائر القديمين حاجي بابا صالح \*\*\* دي \*\*\* و تسعماية من  
الهجرة النبوية //

God Almighty says, &c. [as above]. This blessed mosque was built in the reign of Sul'tán 'Aláuddunyá waddín Abul Muza'ffar Husáin Sháh, the king,—may God perpetuate his reign!—by the great and liberal Malik, the servant of the Prophet, who has made a pilgrimage to Makkah and Madínah and has visited the two footprints of the Prophet, Hájí Bá bá Sálíh. Dated 911, A.H.

The wanting words are no doubt *عشر حادي* عشر حادي, which would be 911. A small slab let in the brick work of Bá bá Sálíh's tomb contains the following date of his death.

No. 18. *The Inscription on Bá bá Sálíh's Tomb.*

الله لا اله الا هو ليجمعنكم الى يوم القيامة لا ريب فيه و من اصدق من  
الله حديثا //

\*\*\* روضة الحاجي الحرمين الزائر القديمين خادم النبي عليه السلام  
حاجي بابا صالح اله \*\*\* في تاريخ \*\*\* ربيع الاول من سنة اثني \*\*\*

O God! There is no God but He. He will surely collect you towards the day of resurrection, and who is more truthful a speaker than God? [Qor., IV. 89.] \*\*\* the tomb of the pilgrim to Makkah and Madínah, who has visited both footprints of the Prophet, the servant of the Prophet (upon whom be peace!), Hájí Bá bá Sálíh \*\*\* (*almutawaffá*, who died) on ... Rabí I., ... 2.

Thus it seems that he died in A. H. 912. Dr. Wise says—“No one here has heard of the name of this pious man. The neighbourhood of these mosques is very old. Qadam Rasúl (the ‘Footprint of the Prophet’), a famous place of pilgrimage, on a mound some sixty feet high, is a little to the north-west. Gangakol Bandar is on the west, and across the Lak’hya River is Khizrpúr with the ruins of what I believe was the residence of ‘Isá Khán, mentioned in the *Áin i Akbari*.”

A third mosque built by Báábá Sálíh is in ‘Azímnagar, District Dháká.

No. 19. *The Báábá Sálíh's Inscription of 'Azímnagar.*

قال الدّبيّ صليّ الله عليه و سلم عجلوا بالصّلاة قبل الفوت و عجلوا  
بالذّوبة قبل الموت \* بني هذا المسجد المبارك الملك المعظم المكرّم  
بابا صالح و قد تمّ بناء هذا المسجد في أوّل المحرمّ سنة ٩١٠

The Prophet—may God bless him!—says, ‘Make quick the prayer before the end, and hasten the *naubat* before death. This blessed mosque was built by the exalted, liberal Malik, Báábá Sálíh, and the building was completed on the first Muharram 910 [or 901,—the numbers are unclear].

No. 20. *The Fath Sháh Inscription on Ádam Shahíd's Mosque at Bikrampúr (Dháká District).* A. H. 888.

General Cunningham and Dr. J. Wise have each sent rubbings of this inscription.

قال الله تعالى و انّ المساجد لله فلا تدعوا مع الله احدا قال الدّبيّ  
صليّ الله عليه و سلم من بني مسجد في الدّنيا بني الله له مثله في  
الآخرة بني هذا المسجد الجامع الملك المعظم ملك كافور في زمان  
السلطان ابن السلطان جلال الدّنيا و الدّين ابو المظفر فتح شاه السلطان  
ابن محمود شاه السلطان في تاريخ اوسط شهر رجب سنة ثمان و ثمانين  
و ثمانماية ١١

God Almighty says, &c., [as above]. This Jámi' Masjid was built by the great Malik, Malik Káfúr, in the time of the king, the son of the king, Jaláuddunyá waddín Abul Muza'ffar Fath Sháh, the king, son of Mahmúd Sháh, the king, in the middle of the month of Rájab, 888, A. H. (August, 1483, A. D.)

Dr. Wise writes as follows—

‘The Masjid of Ádam Shahíd is in Bikrampúr at a village called Qází Qaçbah, within two miles of Ballálbári, the residence of Ballál Sen. Mr.

Taylor, in his "Topography of Dacca" states that Adam Shahíd, or Bááb Adam, was a Qází, who ruled over Eastern Bengal. He gives no authority for this statement, and, at the present day, the residents of the village are ignorant of this fact. They relate that Bááb Adam was a very powerful Darwish, who came to this part of the country with an army during the reign of Ballál Sen. Having encamped his army near 'Abdullahpúr, a village about three miles to the N. E., he caused pieces of cow's flesh to be thrown within the walls of the Hindú prince's fortress. Ballál Sen was very irate, and sent messengers throughout the country to find out by whom the cow had been slaughtered. One of the messengers shortly returned and informed him that a foreign army was at hand, and that the leader was then praying within a few miles of the palace. Ballál Sen at once galloped to the spot, found Bááb Adam still praying, and at one blow cut off his head.

'Such is the story told by the Muhammadans of the present day, regardless of dates and well-authenticated facts.

'The Masjid of Bááb Adam has been a very beautiful structure, but it is now fast falling to pieces. Originally, there were six domes, but three have fallen in. The walls are ornamented with bricks beautifully cut in the form of flowers and of intricate patterns. The arches of the domes spring from two sandstone pillars, 20 inches in diameter, evidently of Hindú workmanship. These pillars are eight-sided at the base, but about four feet from the ground they become sixteen-sided. The *mihrábs* are nicely ornamented with varied patterns of flowers, and in the centre of each is the representation of a chain supporting an oblong frame, in which a flower is cut.

'The style of this Masjid is very similar to that of the old Goáldih Masjid at Sunnárgáon and to that of 'Tsá Khán's Masjid at Khizrpúr.\*

No. 21. *The Fath Sháh Inscription of Sunnárgáon.* A. H. 889.

General Cunningham has sent a rubbing of the following inscription—

قال الله تعالى و ان المساجد لله فلا تدعوا مع الله احدا \* وقال النبي  
صلى الله عليه وسلم من بنى مسجدا بنى الله له سبعين قصرا في  
الجنة \* بنى هذا المسجد في عهد السلطان الاعظم المعظم جلال الدنيا .

\* Dr. Wise, in one of his letters addressed to the Society, makes the following remark on Sher Sháh's road from the Brahmaputra to the Indus.

"I see in the last volume of Elliot's 'History of India' that doubts are expressed of there ever having been a road made from Sunnárgáon to the Indus by Sher Sháh, as mentioned by Firishtah and others. In this district there are two very old bridges, which local tradition states were constructed by that monarch, and which lie exactly where such a road would have been. One is still used, the other has fallen in."

و الدّين ابو مظفر فتح شاه السلطان ابن محمود شاه السلطان خلد الله  
 ملكه و سلطانه \* بانى المسجد مقرب الدولة ملك . . . الدّين سلطاني  
 جامدار غير محلي و سرلشكر و وزير اقليم معظم آباد و نيز مشهور محمود آباد و  
 سرلشكر تهانه لود و كان ذلك فى التاريخ من المحرم سنة تسع و ثمانين  
 و ثمانماية ١١

God Almighty says, &c., (as before). And the Prophet says, &c., (as before).

This mosque was built during the reign of the great and exalted king, Jalāl-uddunyá waddín Abul Muza'far Fath Sháh, the king, son of Mahmúd Sháh, the king,—may God perpetuate his kingdom and rule! The builder of the mosque is Muqarrab uddaulah, Malik.....uddín, the Royal, keeper of the wardrobe outside the Palace, the commander and wazir of the territory of Mu'azzam-ábád, also known as Mahmúdábád, and commander of Thánah Láu'úd. This took place during Muharram, 889. (A. D. 1484.)

The geographical names occurring in this inscription have been discussed above.

#### THE HABSHI' KINGS.

The pretorian band of Abyssinians, which Bárbak Sháh had introduced into Bengal, became from the protectors of the dynasty the masters of the kingdom, and eunuchs were the actual rulers of the country. The very names of the actors during the interregnum between the end of the Ilyás Sháh dynasty and the commencement of the house of Husain Sháh, proclaim them to have been Abyssinian eunuchs;\* and what royalty at that time was in Bengal is well described by Abul Fazl, who says that, after the murder of Fath Sháh, low hirelings flourished;† and Firishtah sarcastically remarks that the people would only obey him who had killed a king and usurped the throne. Faria y Souza also says of the kings of that time:—

“They observe no rule of inheritance from father to son, but even slaves sometimes obtain it by killing their master, and whoever holds it three days they look upon as established by divine providence. Thus it fell out that in 40 years' space they had 13 kings successively.”

\* Names as Káfúr (camphor), Qaranful (clove), Fírúz and Fírúzah (turquoise), Almás (diamond), Yáqút (cornelian), Habshí Khán, Indíl, Sídí Badr, &c. Camphor was looked upon as an anti-aphrodisiac (*vide my Áín translation*, p. 385); hence the name was appropriate. The Fath Sháh inscription No. 20 mentions a Malik Káfúr; and we are reminded of the Káfúr Hazárdínárí of 'Aláuddín's reign.

† ‘The kings of Bengala, in times past, were chosen of the Abassine or Æthiopian slaves, as the Soldans of Cairo were some time of the Circassian Mamalukes.’ *Purchas*,

The Habshí kings are Sultán Sháhzádah, Fírúz Sháh, and Muzaffar Sháh. Mahmúd Shah II. appears to belong to the old dynasty.

### XVII. Sulta'n Sha'hza'dah.

(Bárbak, the Eunuch.)

The owner of this odd title reigned either two and a half months (Tabaqát and Firishtah), or perhaps eight months (Firishtah), or according to a pamphlet which the author of the Riyáz possessed, six months. He was murdered by

### XVIII. Saifuddi'n Abul Muzaffar Fírú'z Sha'h (II.).

(Malik Indíl Habshí.)

He had been a distinguished commander under Fath Sháh, and proved a good king. According to the histories, he died a natural death after a reign of three years, in 899,—a wrong date. The Riyáz says that a mosque, a tower, and a reservoir, in Gaur were built by him.

The coin published by Marsden as belonging to this king, has been shewn by Mr. Thomas to belong to Fírúz Sháh Bahmaní.

The following passage from João de Barros refers to either this king or Husain Sháh :—

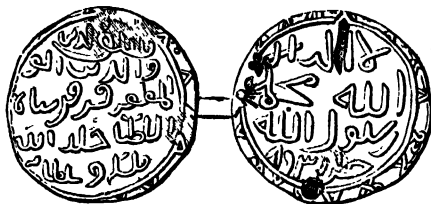
'One hundred years before the Portuguese visited Chátgáon, a noble Arab arrived there from 'Adan (Aden), bringing with him 200 men. Seeing the state of the kingdom, he began to form ambitious projects of conquest. Dissimulating his intentions, he set himself up as a commercial agent, and on this pretext added to his followers a reinforcement of 300 Arabs, thus raising his total force to 500 men. Having succeeded through the influence of the *Mandarijs*, who were the governors of the place, in procuring an introduction to the king of Bengal, he assisted that monarch in subduing the king of Orisá, his hereditary foe. For this service he was promoted to the command of the King's body-guard. Soon afterwards he killed the king, and himself ascended the throne. The capital was at this time at Gaur.'

The chronology of Fírúz Sháh II.'s reign may be fixed with the help of the following, apparently unique, coin, the original of which is in the British Museum. Col. Guthrie kindly sent the Society a cast, from which the woodcut below has been made. The coin gives the year 893 (A. D., 1488). This year entirely agrees with the ascertained dates of Jaláluddín Fath Sháh's reign, and with the earliest ascertained year of Muzaffar Sháh. Fírúz Sháh II., therefore, reigned from 893 to 895, or 896. The former, 895, is perhaps preferable to 896, because both Mahmúd Sháh and Muzaffar Sháh reigned in 896.

I. Fírúz Sháh II. Silver. No mint town. A. H., 893. (A. D. 1488.) No margins.

OBVERSE.—سیف الدین ابوالمظفر فیروز شاه السلطان خلد الله ملکہ  
وسلطانہ

REVERSE.—لا اله الا الله محمد رسول الله خزانه ۸۹۳



Saifuddunyá waddín Abul Muzaffar Fírúz Sháh, the king,—may God perpetuate his kingdom and rule! There is no God but Allah, Muhammad is the Prophet of God. Treasury issue of 893.

#### XIX. Na'siruddín Abul Muja'hid Mahmu'd Sha'h (II).

He was raised to the throne on Fírúz Sháh's death, though the government was in the hands of one Habshí Khán. After a short time, Habshí Khán, and immediately after, Mahmúd Sháh, were killed by Sidi Badr Díwánah, who proclaimed himself king.

Though the histories call Mahmúd the son of Fírúz Sháh, there is little doubt that the statement of Hájí Muhammad Qandahári, preserved by Firishtah, is correct—"In the history by Hájí Muhammad Qandahári,\* it is written that Sultán Mahmúd was the son of Fath Sháh, and that Habshí Khán was a eunuch of Bárbak Sháh, who by Fírúz Sháh's orders had brought up Mahmúd. After Fírúz Sháh's death, Mahmúd was placed on the throne; but when six months had passed, Habshí Khán shewed inclination to make himself king, and Sidi Badr killed him." These facts agree well with the following circumstances: *First*, all histories say that Fath Sháh, at his death, left a son two years old, and his mother, at Sultán Sháhzádah's death, declared herself willing to leave the throne to him, who had brought her husband's murderer to account. *Secondly*, according to Muhammadan custom, children often receive the names of the grandfather; hence Fath Sháh would call his son Náçiruddín Mahmúd; but as the *kunya* must be different, we have here 'Abul Mujáhid,' while the grandfather has 'Abul Muzaffar.'

General Cunningham found the following inscription of this king in Gaur; unfortunately, the date is illegible.

\* The Lak'hnan edition of Firishtah calls him 'Hájí Mahmúd.' His historical work is not known at the present day.

No. 22. *The Mahmúd Sháh (II) Inscription of Gaur.* (A. H. 896 ?)  
(Pl. VII, No. 3.)

قال النبي صلى الله عليه وسلم من بني مسجد لله بني الله له قصر  
في الجنة \* بني المسجد في عهد سلطان الزمان بالعدل والاحسان غوث  
الاسلام والمسلمين ناصر الدنيا والدين ابوالمجاهد محمود شاه السلطان  
خله الله ملكه و سلطانه بنى المسجد الحان الاعظم المعظم الغ مجلس  
خان \*\*\* في التاريخ الثالث والعشرين من شهر ربيع الا [ ول سنة ست  
وتسعين و ثمانماية ؟ ]

The Prophet (may God bless him !) says, 'He who builds, &c., [as before]. This mosque was built in the reign of the king of the time, (who is endowed) with justice and liberality, the help of Islám and the Muslims, Nâçiruddunyá waddín Abul Mujáhid Mahmúd Sháh, the king—may God perpetuate his kingdom and rule!—by the great and exalted Khán Ulugh Majlis Khán.....(illegible). Dated, 23rd Rabi'.....

Marsden has published a silver coin of this king, which has likewise no date (*vide* Numism., Pl. XXXVI, No. DCCXXIV); but, as Laidley correctly observes, he ascribes it wrongly to Mahmúd Sháh of Dihlí. The legend of the coin is—

REVERSE.—( P ) المؤيد بتأييد الرحمن خليفة الله بالعدل والاحسان

OBVERSE.—السلطان العادل ناصر الدنيا والدين ابو المجاهد محمود شاه السلطان

The words *bil'adl wal-ihsán* are not clear, they may also be *العصر والزمان* as elsewhere suggested by me; but the former coincides with the phrase used in the inscription. I cannot see the word *فتحاباد*, which Laidley gives.

According to the chronological remarks made by me regarding the reign of Firúz Sháh, we have to place Mahmúd Sháh's reign in 896, A. H.

## XX. Shamsuddi'n Abul-Nasr Muzaffar Sha'h.

(Sídí Badr Diwánah.)

The reign of this king, who is represented to have been a blood-thirsty monster, is said in all histories to have lasted three years and five months; but his death at the hands of the next king cannot have taken place in 903, because his coins and inscriptions mention the years 896 and 898. He must, therefore, have been killed in 899, the first year in which Husain Sháh struck coins.

A Muzaffar Sháh inscription was published by me in the Journal for 1872, p. 107, from an imperfect rubbing. Since then Mr. W. M. Bourke



has sent me a clear rubbing with the date distinct. I, therefore, republish it with a corrected translation.

No. 23. *The Muzaffar Sháh Inscription of Gangarâmpúr.*

A. H. 896. (A. D. 1491.)

بني هذه العمارۃ المسجد فى عهد المخدم المشهور قطب اوليا مخدم  
مولانا عطا طيب الله ثراه و جعل الجنة مثواه فى عهد شمس الدنيا  
والدين ابو النصر مظفر شاه سلطان خلد الله ملكه و سلطانه فى التاريخ  
ست و تسعين و ثمانماية ١١

This mosque was built in the time (?) of the renowned saint, Mauláná 'Atá—may God render his grave pleasant and may He make Paradise his dwelling place!—during the reign of Shamsuddunyá waddín Abul-Nagr Muzaffar Sháh, the king—may God perpetuate his kingdom and his rule! Dated, A. H. 896.

Mr. Bourke's rubbing shews that the word *samánmiah* is cut into the second bar, which separates the third line from the second. Below the last line there is another line cut into the lowest bar; but the letters are too small and partly broken to admit of a satisfactory reading. I can recognize the words 'Mullá Mubárak' and *mī'már*, 'builder.'

Laidley has published a silver coin of this king, the legend of which is (*vide* J. A. S. B., Vol. XV, for 1846, Pl. V, No. 19)—

OBVERSE.—شمس الدنيا و الدين ابو النصر مظفر شاه السلطان خلد الله ملكه  
وسلطانه

*Margin.*—Cut away.

REVERSE.—The Kalimah. Year, illegible.

*Margin.*—the four Khalífahs.

The Honorable E. C. Bayley is about to publish a gold Muzaffar Sháhi, which seems to be of 896, A. H.

Muzaffar Sháh, according to the Riyáz, built a mosque in Gaur. General Cunningham has sent the Society a rubbing of another inscription from the Chhotá Dargáh (Núr Quṭb 'Álam's Dargáh) in Hazrat Panḍuah. It is, in point of execution, a very fine inscription.

No. 24. *The Muzaffar Sháh Inscription of Panḍuah.* A. H. 898.

*Vide* Pl. VI, No. 2.

قال الله تعالى انّ اول بيت وضع للناس للذي ببكة مباركا و هدى  
للعالمين فيه آيات بيّنات مقام ابراهيم و من دخله كان آمنا و لله اعلى  
الناس حج البيت من استطاع اليه سبيلا و من كفرنا ان الله غنى

عن العالمين • بني في البيت الصوفة الروضة قطب الاقطاب قتيل  
 محبت وهاب شيخ المشايخ حضرت نور الحق والشرع سيد قطب عالم  
 قدس الله سرة العزيز و نور الله قبره • بني هذا البيت في عهد السلطان  
 العادل البازل الفاضل غوث الاسلام والمسلمين شمس الدنيا والدين  
 ابوالنصر مظفر شاه سلطان خلد الله ملكه و سلطانه و اعلى امره و شانه  
 بني هذا البيت في خلافة شيخ الاسلام والمسلمين شيخ المشايخ ابن شيخ  
 المشايخ شيخ محمد غوث سلمه الله تعالى دائما مؤرخا فى السبع والعشر  
 من شهر رمضان مبارك فى سنة ثمان تسمين ثمانماية ١١

God Almighty says, ' Verily, the first house that was founded for men, is the one in Bakkah [Makkah], blessed, and a guidance to all beings. In it are clear signs: the place of Abraham, and who entered into it, was safe, and God enjoined men to visit it, if they are able to go there; but whosoever disbelieves, verily God is independent of all beings. [Qor. III, 90 to 92.]

In this Sûfi building the tomb of the pole (*quṭb*) of poles was built, who was slain by the love of the All-Giver, the Shaikh of Shaikhs, Hazrat Nûr ul H a q washshara', Sayyid Quṭb 'Ālam—may God sanctify his beloved secret, and may God illuminate his grave! This house was built in the reign of the just, liberal, learned king, the help of Islām and the Muslims, Shamsuddunyā waddīn Abul- Naqr Muza'far Shāh, the king, may God perpetuate his kingdom and rule, and may He elevate his condition and dignity! This house was built during the *khilāfat*\* of the Shaikh ul-Islām, the Shaikh of Shaikhs, son of the Shaikh of Shaikhs, Shaikh Muhammad Ghans—may God Almighty ever protect him!

Dated, 17th Ramazān, 898. [2nd July, 1493.]

Nûr Quṭb 'Ālam was mentioned above among the Saints of Paṇḍuah.

#### THE HUSAINÍ DYNASTY.

On Muzaffar Shāh's death in 899, 'Aláuddín Husain Shāh, son of Sayyid Ashraf, usurped the throne. Of the reign of no king of Bengal—perhaps of all Upper India before the middle of the 10th century—do we possess so many inscriptions. Whilst the names of other Bengal kings scarcely ever occur in legends and remain even unrecognized in the geographical names of the country, the name of "Husain Shāh, the good," is still remembered from the frontiers of Orisá to the Brahmaputra.

I have treated of the chronology of the reigns of Husain Shāh and his successors in my article, "On a new king of Bengal, &c.," published in the Journal, for 1872, Pt. I, pp. 331 to 340, and according to that paper, we have—

\* The reign, if I may say so, of a spiritual teacher.

1. 'Aláuddín Abul Muzaffar Husain Sháh, 899 to 927 (929 ?).
2. Náçiruddín Abul Muzaffar Nuçrat Sháh, 927 (929 ?) to 939.
3. 'Aláuddín Abul Muzaffar Fírúz Sháh (III.), 939.
4. Ghiyásuddín Abul Muzaffar Mahmúd Sháh (III.), 940 to 944, (defeated by Sher Sháh).

I have now only to describe a few unpublished coins and to give several new inscriptions belonging to the reigns of these kings.

### XXI. 'Ala'uddi'n Abul Muzaffar Husain Sha'h.

Marsden (Pl. XXXVIII, Nos. DCCLXXIX and DCCXCIII) has given two different Husain Sháhs, the former of Fathábád, 899, A. H., and the latter of Husainábád, 914, A. H.\* Laidley has two new types, one struck at Husainábád, 912, A. H., and the other (*vide* his plate, No. 21) resembling that of Marsden, but with a different legend. The cabinet of the Asiatic Society contains a few new varieties, with and without dates.

1. *Vide* Pl. IX, No. 9. Silver. Weight, 163·57 grains. No mint-town. A. H. 900. (As. Soc. Bengal, one specimen). Circular areas; no margin.

OBVERSE. — السلطان العادل علا الدنيا و الدين ابو المظفر

REVERSE. — حسين شاه سلطان بن سيد اشرف الحسيني خاد ملكه و سلطانه ١٠٠

Col. Guthrie in a MS. list of Bengal Coins in the British Museum quotes Husain Sháhs struck at Jannatábád (Husainábád ?) in 918 and 919.

The inscriptions belonging to Husain Sháh's reign are most numerous; the date of the latest two is 925, A. H. Those of which the Society has received rubbings from General Cunningham are marked [G. C.].

1. *Munger*, 903; mentions Prince Dányál. Published Journal, 1872, p. 335. [G. C.].

2. *Machain, Parganah Ballipúr, Dháká*, 22nd Jumáda I, 907, or 3rd December, 1501. Received from Dr. J. Wise.

3. *Bonhara*, in Bihár, 908. Published, Proceedings 1870, p. 112.

4. *Cheran*, in Bihár, 909. Published, Proceedings 1870, p. 297.†

\* Marsden reads the latter date 917. On the former coin, the king's first name is spelt علاو الدين, instead of علاء الدين, with an intermediate *wáu*. This *wáu* should not be read: it arises from a whimsical rule of a class of pedantic Kátibs who maintain that the vowel *u* alter a long *á*, as in 'Aláu, requires "a support."

The obverse of the latter coin, to which I alluded in the note to p. 301 of the Journal for 1870, Pt. I, is still a puzzle to me, though I have wasted much time in looking at the coin, patiently waiting for a happy guess. I now believe that the second line is العالم بسلطنته *alqáim bisalṭanatihī*, the last word being written disconnected, as *sulṭānahu* on the reverse. But the third line is unclear. The weight of the coin is 162·64 grains.

† For a Gaur Inscription of 909, *vide* Glazier, Report on Rangpore, 1873, p. 108.

5. *Silhat*, 911. From Dr. Wise.
  6. *Máldah*, 911. [G. C.]
  7. *Sunnárgáon*, 911. Given above, No. 17.
  8. *Hazrat Panđuah*, 915. [G. C.]. The rubbing is unclear.
  - 9 to 11. *Gaur*; two of 916, and one of 918. [G. C.]
  12. *Sunnárgáon*, 2nd Rabí' II., 919, or 7th June, 1513. [G. C.]
- Published, Journal, 1872, p. 333.
13. *Bírbhúm*, 922. Published, Journal, 1861, p. 390.
  14. *Dhámraí*, 922. Published, Journal, 1872, p. 110.
  15. *Sunnárgáon*, 15th Sha'bán, 925, or 12th August, 1519. [G. C.]
  16. *Gaur*, 925, or A. D. 1519. Published with plate, J. A. S. B., 1871, Pt. I, p. 256.

No. 25. *The Husain Sháh Inscription of Machain.* (A. H. 907.) \*

قال النبي صلي الله عليه و سلم من بني مسجدنا لله بني الله له  
بيتا مثله في الجنة \* بني هذا المسجد الجامع السلطان المعظم المكرم علاو  
الدنيا والدين ابوالمظفر حسين شاه السلطان بن سيد اشرف الحسيني  
خلد الله ملكه و سلطانه في النّازي والعشرين من جمادي الازل سنة  
سبع و تسعمائة ١١

The Prophet says, &c., &c. (as before). This Jámí' mosque was built by the great and liberal king 'Alauddunya waddín Abul Muzaffar Husain Sháh, the king, son of Sayyid Ashraf ul-Husaini—may God perpetuate his kingdom and rule!

Dated, 22nd Jumada I, 907. (3rd December, 1501).

No. 26. *The Husain Sháh Inscription of Silhat.* A. H. 911.

بسم الله الرحمن الرحيم \* الأمر هذه العمارة البقعة المباركة المنصوبة بدار  
الاحسان حرم الله تعالى من مخافة الزمان العابد العالي الكبير \* \* شيخ  
جلال مجرد كنيائي قدس الله تعالى سره العزيز في عهد السلطان علاو  
الدنيا والدين ابوالمظفر حسين شاه السلطان خلد الله ملكه و سلطانه بدار  
خااعظم و خااعظم خالصخان جامدار غير محلي و سركو و زبرو اقليم  
معظم آباد سنة احدى عشر و تسعمائة ١١

In the name of God, the merciful and the clement! He who ordered the creation of this blessed building, attached to the house of ben-efit (*Silhat*)—may God protect it against the ravages of time!—is the devotee, the high, the great, \*\*\* Shaikh Jalál, the hermit, of Kanyá—may God Almighty sanctify his dear secret! It was built during the reign of Sultan 'Alauddunya waddín Abul Muzaffar Husain Sháh, the king, by the great Khán, the exalted Kháqán, Khátiq Khán,

keeper of the wardrobe outside the palace, commander and wazir of the District Mu'azzamábád. In the year 911 (A. D. 1505.).

In this inscription Shaikh Jalál, whose biography was given under Yúsuf Shah, is called Kanyá, i. e. of Kanyá, which appears to be a place in Arabia.

He is said to have 'ordered' the 'erection of the building. This can only refer to an order given in a dream, as in the case of 'Alí Sháh and Jalál Tabrizi.

No. 27. *The Husain Sháh Inscription of Máldah.* A. H. 911.

قال النبي صلى الله عليه وسلم من بنى مسجداً لله بنى الله له  
بيتاً مثله في الجنة \* بنى هذا المسجد الجامع السلطان المعظم المكرم علاء  
الدنيا والدین ابو المظفر حسين شاه السلطان بن سيد اشرف الحسيني  
خلد الله ملكه و سلطانه في سنة احدى عشر و تسعمائة //

The Prophet says, &c, &c. This Jami' mosque was built by the great and liberal king 'Alauddunyá waddín Abul Muzaffar Husain Shah, the king, son of Sayyid Ashraf ul Husaini—may God perpetuate his kingdom and rule! In the year 911. (A. D. 1505).

No. 28. *A Husain Sháh Inscription from Gaur.* A. H. 916.

قد بنى هذا الباب الروضة مخدوم شيخ اخي سراج الدين السلطان  
المعظم المكرم علاء الدنيا والدين ابو المظفر حسين شاه السلطان بن سيد  
اشرف الحسيني خلد الله ملكه و سلطانه في سنة ست عشر و تسعمائة //

The door of the tomb of the venerated Shaikh Akhí Sirájuddín was built by the great and liberal king, 'Alauddunyá waddín Abul Muzaffar Husain Sháh, the king, son of Sayyid Ashraf ul-Husaini—may God perpetuate his kingdom and rule! In the year 916. (A. D. 1510.)

Shaikh Akhí was mentioned above among the saints of Gaur.

No. 29. *Another Husain Sháh Inscription from Gaur.* A. H. 916.

بنى هذا الباب الروضة في عهد السلطان المعظم المكرم علاء الدنيا  
والدين ابو المظفر حسين شاه السلطان بن سيد اشرف الحسيني خلد الله  
ملكه و سلطانه و اعلى امره و شانه و اعز خياره و برهانه في سنة ست  
عشر و تسعمائة //

The door of this tomb was built during the reign of the exalted and liberal king, 'Aláuddunyá waddín Abul Muza'ffar Husain Sháh, son of Sayyid Ashraf ul-Husainí,—may God perpetuate his kingdom and rule, and elevate his condition and dignity, and may He render his benefits and evidence honorable! In the year 916. (A. D. 1510.)

No. 30. *A third Husain Sháh Inscription from Gaur.* A. H. 918.

بني هذا الباب الحصن في عهد السلطان المعظم المكرم علاؤ الدنيا  
والدين ابو المظفر حسين شاه السلطان بن سيد اشرف الحسيني خلد الله  
ملكه و سلطانه في سنة ثمان عشر و تسعمائة //

This gate of the Fort was built during the reign of the exalted and liberal king 'Aláuddunyá waddín Abul Muza'ffar Husain Sháh, the king, son of Sayyid Ashraf ul-Husainí—may God perpetuate his kingdom and his rule! In the year 918. (A. D. 1512.)

No. 31. *The Husain Sháh Inscription of Sunnargáon.* A. H. 925.

قال الله تعالى و ان المساجد لله فلا تدعوا مع الله احدا والله اعلم  
بالصواب قال النبي صلى الله عليه و سلم من بنى المسجد في الدنيا  
بني الله له سبعين قصرا في الجنة \* بني هذا المسجد في عهد  
سلطان السلاطين سلطان حسين شاه ابن سيد اشرف الحسيني خلد الله ملكه  
و سلطانه \* بني هذا المسجد ملا هزبر اكبر خان بتاريخ پانزدهم ماه شعبان  
سنة خمس و عشرين و تسعمائة //

God Almighty says, Surely the mosques, &c., (as before). And the Prophet says, &c., &c., (as before).

This mosque was built in the reign of the king of the kings, Sultán Husain Sháh, son of Sayyid Ashraf ul-Husainí—may God perpetuate his kingdom and rule! This mosque was built by Mullá Hizabr Akbar Khán, on the 15th Sha'bán, 925. (12th August, 1519.)

## XXII. Na'siruddín Abul Muza'ffar Nusrat Sha'h.

Of the inscriptions belonging to the reign of this king, I have published three, viz.—

1. *Sunnargáon*, 929, or 1523. [G. C.] Published, Journal, 1872, p. 338.

2. *Sátgón*, Ramazán, 936, or May, 1529. Published, Journal, 1870, p. 298.

3. *Gaur*, Qadam Rasúl, 937, or 1530-31. [G. C.] Published, Journal, 1872, p. 338. *Vide* Glazier, Rangpore Report, p. 108.

A few weeks ago I received a black basalt slab from the old mosque in Mangalkot, Bardwán District, with the following inscription—

No. 32. *The Nuçrat Sháh Inscription from Mangalkot.* A. H. 930.

قال النبي صلى الله عليه وسلم من بني مسجدا لله بني الله له بيتا  
مثله في الجنة بني هذا المسجد الجامع في عهد السلطان المعظم السلطان  
بن السلطان ناصر الدنيا والدين ابو المظفر نصرتشاه السلطان بن حسين  
شاه السلطان خلد الله ملكه و سلطانه وبانيه خان ميانمعظم بن مراد  
حيدر خان دام عزه في سنة ثلثين وتسعمائة ١١

The Prophet says, He who builds, &c, (as before). This Jami' Mosque was built in the reign of the exalted king, who is the son of a king, Naçiruddunyá waddín A'bul Muzaffar Nuçrat Sháh, the king, son of Husain Sháh, the king—may God perpetuate his kingdom and rule! Its builder is Khan Miyán Muz'zam, son of Murád Haidar Khán—may his honor continue! In the year 930, A. H. (A. D. 1524)

The following important inscription I owe to the kindness of J. R. Reid, Esq., C. S., A'zamgarh, N. W. Provinces, who sent me a rubbing. The slab was found on the right bank of the G'hágrá, near Sikandarpúr.

No. 33. *The Nuçrat Sháh Inscription of Sikandarpúr, A'zamgarh.*  
A. H. 933.

لا اله الا الله محمد رسول الله قال النبي صلى الله عليه وسلم من بني  
مسجدا في الدنيا بني الله تعالي له سبعين قسرا في الجنة \* المتأسس  
لهذا المسجد في عهد الملك العادل ناصر الدنيا والدين ابو المظفر نصرتشاه  
بن حسين شاه السلطان جعل الله في زمرة عباده آلرالمجيد و هو  
خاناعظم محسدار خان سرلشكر دره خريد في شهر الرجب ٢٧ سنة ثلث  
و ثلثين وتسعمائة ١١

There is no God, &c. He who builds a mosque, &c. The founder of the mosque, during the reign of the just king Náçiruddunyá waddín A'bul Muzaffar Nuçrat Sháh, son of Husain Sháh, the king—may God place him among the number of his servants!—is the great Ulur [Ulugh], i. e. the great Khán.....Khán, commander of the district of Kharíd. On the 27th Rajab 933. (29th April, 1527.)

The inscription confirms the histories, according to which Nuçrat Sháh extended his authority over the whole of Northern Bihár; and as Kharid lies on the right bank of the G'hágrá, Nuçrat Sháh must have temporarily held away in the A'zamgarh District.

The coinage of this king contains numerous varieties, among which there are several struck by him during the lifetime of his father. The latter coins are mostly of a rude type, and look debased; besides, they are restricted to the Sundarban mint town of Khalifatábád (Bágherhát) and to Fathábád. They either indicate an extraordinary delegation of power or point to a successful rebellion.

1. *Vide* Pl. IX., No. 10. Silver. Weight, 154·06 grains. *Khalifatábád*, 922, A. H. (As. Soc. of Bengal). Circular areas; no margin.

OBVERSE.—السلطان بن السلطان ناصر الدنيا و الدين ابو المظفر

REVERSE.—نصرة شاه السلطان بن حسين شاه السلطان الحسيني خلد ملكه

خليفه باد ۹۲۲

3. *Vide* Pl. IX., No. 11. New variety. Silver. Weight, 163·14 grains. *Mint town* ? A. H., 927. (Cabinet, As. Soc. of Bengal.) Circular areas; no margin.

OBVERSE.—السلطان بن السلطان ناصر الدنيا و الدين ابو المظفر

REVERSE.—نصرت شاه السلطان بن حسين شاه السلطان خلد الله ملكه

و سلطانه ۹۲۷

3. *Vide* Pl. IX., No. 12. New variety. Silver. Weight, 162·952 grains. No mint town, or year. Circular areas, and scollops in the margin. The characters are neat. (As. Soc. Bengal.)

OBVERSE.—As in the preceding.

REVERSE.—نصرت شاه السلطان ابن حسين شاه السلطان خلد ملكه [يد هرمزد ؟]

I am doubtful as to the correctness of the last words *yad i Hurmuzd*, 'by the hand (engraved by) Hurmuzd.' The characters, though smaller, are clear, and yet it is difficult to suggest anything else.

The years of the three Nuçrat Sháhí published by Marsden and Laidley are not clear; they may be 924 (Marsden) and 927, or 934 and 927. The Cabinet of the As. Soc. of Bengal, besides the above, contains six different types, among which there is a silver coin struck at *Nuçratábád*, 924 A. H., but it is not clear to what locality this new name was applied.

Nuçrat Shah's name as prince seems to have been Naçib Khán; at last this would explain why the histories call him Naçib Sháh.

He was succeeded by his son

### XXIII. 'Ala'uddín Abul Muzaffar Fir'uz Sha'h (III).

The Kalnah inscription (A. H. 939) of this king, which I published in the Journal, for 1872, Pt. I, p. 332, is of some importance, and I now give a plate of it (*vide* Pl. VII, No. 2). The name of this king is only



mentioned in the Riyáz, and though we do not know his source, his statements have, in several instances, been proved to be correct. In the MS. of his work in the As. Soc. of Bengal—the only copy I know of at present—this king is said to have reigned three *years*, which is impossible;\* but Stewart found three *months* in the copy which he consulted.

The Society's cabinet possesses a specimen of this king's coinage, struck in 939, A. H., the same year as mentioned in the Kalnah inscription.

1. *Vide* Pl. IX., No. 13. Silver. Weight, 163·215 grains. *Husain-ábád*, 939, A. H. Circular areas. The margins are divided into four quadrants, at the beginning of each of which there is the letter *nún*, and in each quadrant there is an arabesque, which looks like the word نصر. The same design is given on Marsden's Nugrat Sháh.

OBVERSE.—السلطان بن السلطان علاؤ الدین ابو المظفر فیروز شاه

REVERSE.—بن نصرتشاه السلطان بن حسین شاه السلطان خلد الله ملكه و سلطانه

حسینابان ۹۳۹

Firúz Sháh III. was murdered by his uncle

#### XXIV. Ghiya's-uddi'n Abul Muzaffar Mahmu'd Sha'h (III).

General Cunningham's Gaur Inscription of this king, dated 941, was published by me in the Journal, for 1872, Pt. I., p. 339.

Our Society possesses a coin of Mahmúd Sháh of the same type as the one published by Laidley. He refers the coin to 933; but the Society's specimen has clearly 943 A. H. The concentric circles contain the words *badr i sháhí*, or 'royal moon.'

General Cunningham lately sent me the tracing of a Mahmúd Sháhí round *copper* coin, which has the same inscription on both sides, *viz.* العبد غیاث الدین محمود شاه البدرشاهی. But though the phrase *badr i sháhí* seems to shew that the coin belongs to Mahmúd Sháh (III.) of Bengal, it would be desirable to have specimens with dates or mint towns.

Mahmúd Sháh is mentioned in De Barros' work, from which the following facts are taken. Nuno da Cunha, the Portuguese governor of Goa [گوء], sent in 1534 Alfonso de Mello with two hundred men in five ships to Chátgáon, which then again belonged to Bengal, in order to effect a settlement. De Mello, on his arrival, thought it wise to send a few of his men with presents to Gaur, where Mahmúd Sháh, who tyrannically held the crown, kept his court, in great apprehension of being deposed, but with such state that only his women amounted to the number of 10,000; but though De Mello's men found in Alfá Khán† a friend, the king imprisoned them,

\* The passage, however, is corrupt. *Vide* Journal for 1872, Pt. I., p. 339.

† This is, no doubt, the Alfá Husainí of Baghdád, mentioned by me in J. A. S. B., 1872, Pt. I., p. 337.

and gave orders to seize De Mello in Chátgáon. The latter was shortly after treacherously captured with thirty of his men and was sent to Gaur,\* where they were kept strictly confined, because Antony de Sylva Meneses had soon after taken reprisals and sacked Chátgáon. Now at that time Sher Khán and his brother 'Adil Khán had deserted from the Mughul to the king of Bengal. But Sher Khán wished to revenge the death of the youth whom Mahmúd had slain,—De Barros means Fírúz Sháh III.—to procure the throne. Sher Khán, therefore, made war on Mahmúd, and the king asked his Portuguese prisoners to assist him in the defence of Gaur. At the same time Rabelo arrived with three ships sent by the Goa Governor, to demand the release of the captives, and Mahmúd after securing their co-operation sent them to Gorij [Garihí] near K'halgáon, where they valiantly, though in vain, opposed Sher Sháh. Mahmúd, pleased with their prowess, applied to Nuno da Cunha for further assistance; but when Perez de Sampayo came with nine vessels, he found Gaur in the hands of Sher Khán and heard that Mahmúd had been killed.

### III.

I now conclude this essay with my readings and translations of the Bihár collection of rubbings from the time of Muhammad Tughluq to the year 1455 A. D.

The first inscription is taken from the vault of one Sayyid Ahmad Pír-Pahár, regarding whom nothing is at present known in Bihár; but it seems to refer to the building of a portico by a near relation of Muhammad Tughluq.

#### No. 34. *The Muhammad Tughluq Inscription of Bihár.* A. H. 737.

حمد گویم خدا برا صد بار مدح وافر باحمد مختار  
 شد بنا گنبد فلك آسا .. ..  
 گیتی آرا محمد مفسدر سایه ایزدی بهر کشور  
 بوالسجاه خلیفه با جاه .. ..  
 بانی این عمارة المنصور هست بنده مبارک محمود  
 دودۀ خسروی نبیرۀ شاه .. ..  
 برده این دولت از سرافرازی یادگار سبکدگین غازی  
 چون مرتب شد این \*\*\* هفصد و سی و هفت بد گفتم

\* The Portuguese describe Gaur as three leagues in length, well fortified, and with wide and straight streets, along which rows of trees were planted to shade the people, "which sometimes is in such numbers that some are trod to death."

1. I praise God a hundred times, and abundantly glorify Ahmad, the elect.
2. This heaven-touching portico was erected.....
3. The world-adorning Muhammad, who breaks through the ranks, the shadow of God in every realm,
4. Abul Mujáhid, the Khalifah of high dignity,.....
5. The builder of this desirable edifice is the slave Mubárah Mahmúd,
6. Of royal descent, the grandson of Sháh.. ...
7. This dynasty, on account of its elevation, has obscured the memory of Subuktigin i Ghází.

When this...was erected, I said, it was 737, A. H. (A. D., 1336-37.)

If the name in the sixth line were not broken away, we might fix the name of the builder with the help of p. 454 of Baraní's history.

Nos. 35 to 37. *The Malik Ibráhím Bayyú Inscriptions of Bihár.*

The next three inscriptions belong to the Dargáh of Ibráhím Abú Bakr Malik Bayyú, who is *par excellence* the saint of Bihár. The shrine lies on the hill to the north-west of the town.

Malik Bayyú was first mentioned by Buchanan, who supposed him to be a purely mythological personage. Mr. T. W. Beale next published in his valuable *Miftáh uttawárikh* (p. 90) the first of the following inscriptions. Col. E. T. Dalton also mentions him in his 'Ethnology of Bengal' (p. 211), and says that Jangrá, a Santál Rájah, destroyed himself and his family in the Fort of Chai Champá, Hazáribágh District, when he heard of Malik Bayyú's approach.

The 'Mujáwirs' or custodians, of the shrine claim to be descended from the Malik. According to traditions still preserved among them, Ibráhím Malik Bayyú was an inhabitant of Butnagar, and was sent by Muhammad Tughluq to chastise Háns Kumár, Rájah of Rohtásgarh. The Rájah frequently came to Bargáoñ, the great Buddhist monastery, to worship. He oppressed the poor Muhammadans of the country. Now it happened that an old woman, a Sayyidah, killed a cow, in order to celebrate the nuptials of her grandson, when a kite snatched up one of the bones, and let it fall near the place where the Rájah worshipped. The Rájah was, of course, enraged, and put the Muhammadan bridegroom to death. At the advice of her friends, the old woman complained to Muhammad Tughluq. Being uncertain as to whom he should intrust with the command of an expedition against Háns Kumár, he consulted the astrologers. They told him, "This very night a storm will occur in the city, of such violence that all the lights will be extinguished. In whose house a lamp may be found burning, he is the man best fitted for the undertaking." Ibráhím Malik Bayyú was found reading the Qorán by lamp-light, and next morning he was appointed to command the expedition. He at once advanced to Bihár, and surprised Rájah Háns Kumár at the Súraj Pok'har, Bargáoñ. Although the Rájah

escaped to Rohtāgarh, the number of the slain was so great, that Malik Bayyú returned with fifty sers weight of sacred threads. He now occupied himself in subduing the warlike tribes of the province, and unfortunately fell at the moment of victory, his enemy Rājah Hāns Kumār having been killed in the same battle. Malik Bayyú's body was brought to Bihār; and the Rājah's head and the sacred threads were buried at the foot of the hill, which still bears the name of Múnḍ-málá.

According to the inscriptions on Malik Bayyú's shrine, he died, apparently peacefully, on the 13th Zil Hijjah, 753, or 20th January, 1353, in the second year of Fírúz Sháh's reign and about a year before his invasion of Bengal.

## No. 35.

بعد دولت شاه جهانگیر که دادا در بهار ملک نوروز  
 شهنشاه جهان فیروز سلطان که بر شاهان گیتی گشت فیروز  
 ملک سیرت ملک یو برهیم که بد در دین چو ابراهیم کین تور  
 بما. ذی الحجه یکشنبه از دهر بدست چون سیزدهار مه درین سوز  
 بهجرت هفصد و پنجه ستاربخ مسافر شد ملک در جنت این روز  
 خداوند! بفضل خویش بروی کدی آسان حساب آخرین روز

1. In the time of the reign of the world-taking Sháh (may the *mulk i naurúz* be in Bihār!),
2. The king of the world, Sulṭán Fírúz, who was victorious over the kings of the Universe,
3. The angelic Malik Bayyú Ibráhim, who in his faith was as zealous as Abraham.
4. In the month of Zil Hijjah, on a Sunday, of the time, when thirteen (days) of the month had been in grief,\*
5. In the year 753 A. H., travelled on that day to Paradise.
6. O Lord, in Thy kindness, make the account of the last day light for him!

## No. 36.

این مقطع بهار ملک سیف دولست کز سهم تیغ او سر افکندي آفتاب  
 بترا همی شکست چو همدام خویش تا در عالم بفاش بود بت شکن خطاب  
 صفدا رصف شکن چو صف آراستی بحرب رستم بآب فتاده و بهمن شده زناب  
 خرشید اگر چه لشکر سیاره را شکست آخر ز کوه ساخت سر پرده حجاب  
 تاریخ آفتاب که یکشنبه از جهان چون لعل رفت در دل سنگ از برای خواب  
 بود از مه معظم ذی الحجه سیزده وز سال بعد هفصد و پنجه سه در حساب

1. This Jágirdár of Bihār is the Malik, the sword of the dynasty, from the point of whose sword the sun turns his head

\* The poetry is bad enough, but metrical slips also occur. The metre is short *haraj*, and the *t* in 'budast' has been elided.

2. Like his namesake (Abraham), he broke idols, so that in the future world the title of 'Iconoclast' might be given him.

3. (He is) the warrior who breaks the ranks (of the enemies); when he arranged his ranks, Rustam fell into feverish restlessness, and Bahman lost his firmness.

4. Although the sun defeats the army of the planets, he makes at last for himself a screen of the mountains.\*

5. On the day of the sun it was, on a Sunday, when, like a ruby in a stone, he (Malik Bayyū) went away from the world, in order to sleep,

6. When thirteen days had passed away from the exalted month of Zil Hijjah, and 753 years of the era.

### No. 37.

درین گنبد که هست از روی معنی بقدر از گنبد افلاک برتر  
 بخفتست شیر مردے کز نهیبش خفته شیر اندر بطن شیر  
 مدار ملک ابراهیم بویگر کد تیغ از بهر حق میزد چو حیدر  
 چنین لشکر کشی کشور کشائی نخیزد دوم اندر هفت کشور  
 کنون چون بردرت افتاد یارب ز راه لطف بکشی برو در  
 بمشک رحمست و کافور رافت کنی دیوار خاکش را معطر

1. In this dome, which in a spiritual sense has a higher value than the dome of heaven,

2. Sleeps a lion, from whose dread ... (unintelligible),

3. The pivot of the realm, Ibrahim Abū Bakr, who wielded his sword for truth like Haidar ('Alī).

4. Such a warfare, such a conquest of realms, will not take place a second time in the seven realms.

5. O God, as he has now fallen down at Thy door, open in mercy Thy door to him!

6. Perfume the walls of his grave with the musk of Thy mercy and the camphor-of Thy forgiveness!

### No. 38. *The Fīrīz Shāh Inscription in the Chhoṭā Dargāh.* A. H. 761.

The Chhoṭā Dargāh of Bihār is the shrine of Badruddīn Badr i 'Ālam. This faqīr came from Mirāṭh, is said to have spent a long time at Chātgaon, and settled at last in Bihār, where he died in 844 A. H., or 1440 A. D., the *tārīkh* of his death being بنور حق پیوست, 'he joined the glory of the Lord.' It is said that the famous Sharafuddīn Munyari had invited him, but Badr delayed in Chātgaon, and only arrived in Bihār forty days after Sharafuddīn's death.

The slab stands in the northern enclosure, and curious to say, has on the other side Inscription No. 6, given above. It thus contains the name

\* The light of the sun is so strong that the planets are not visible; but even the sun sets and loses himself behind the mountains. So also Malik Bayyū.

of the Bengal Fīrūz Shāh on one side and that of the Dihlī Fīrūz Shāh on the other. We often find slabs with Hindū carvings on one side and Muhammadan inscriptions on the other; but I have not heard of a Muhammadan inscription having been treated so; for it is repugnant to the feelings of a Muslim to have God's name walled up. The slab is now considered an infallible cure for evil spirits of all sorts.

مجدد گشت این مبدون عمارت بعد پادشاه عادل پرور  
 شهنشاه جهان فیروز شاه آنک ازو آباد شد صحراب و منبر  
 بسعی و التماس بندۀ خاص برید خطه اندر دور داور  
 ملک سیرت ملک کافی کفایت فهم نامور در هفت کشور  
 گذشته هفصد از تاریخ هجرت فزوده برد یک ترشمت دیگر  
 همیشه باد شه بر تخت دولت چونام خورش فیروز و مظفر

1 This auspicious building was renewed in the reign of the justice-fostering king,

2. The lord of the world, Fīrūz Shāh, through whom niches and pulpits [*i. e., mosques*] flourished,

3 Through the exertion and at the request of the special slave, (who is) the Reporter (*barīd*) of the District, in the time of the just king,

4. An angelic man, a noble whose guarantee is sufficient, a wise man, renowned in the seven realms.

5. Seven Hundred years have passed away of the Era of the Hijrah, and sixty-one besides.

6. May the king on the throne of power remain for ever victorious and successful, as (indicated) by his name!

The following two inscriptions are of importance for the history of the Dihlī empire.

#### No. 39. *The Muhammad Shāh Inscription of Bihār.* A. H. 792.

This inscription belongs to the ruined mosque in Kabīr-uddīnānj, the most northern Mahallah of the town of Bihār. The mosque has three cupolas, the centre one circular, the others octagonal. Two of its lofty minarets have fallen down.

Regarding the king, *vide* Mr. Thomas, 'Chronicles,' p. 306. The metre (long *ramal*) precludes the possibility of an error in the date.

شد بعد دولت شاه محمد نامدار اینچنین مسجد مروج فضل باری کردگار

این بار کرد چون خواجه ضیا ابن علا بد رحمت هفتصد دیگر نود دو در شمار

1. In the time of the reign of Shāh Muhammad, the illustrious, this Masjid became generally used, (by) the grace of God, the Creator.

2. When Khwājah Ziyā, son of 'Alā, erected this edifice, it was 792 after the Hijrah. (A. D. 1390.)

No. 40. *The Mahmúd Sháh (of Dihlí) Inscription of Bihár. A. H. 799.*

This inscription belongs to the *Khánqáh*, or cell, of Ziyá ul Haq, governor of Bihár, who was mentioned in the preceding inscription. The slab was found in the cluster of religious buildings known in Bihár as the Chhotá Takyah, 'the small cloister,' in which there is the tomb of Sháh Diwán 'Abdul Wahháb, who is said to have died in 1096, A. H.

As the inscription mentions Mahmúd Sháh as the reigning king in 799, it follows that Nuçrat Sháh was not acknowledged as opposition king by Malik Sarwar of Jaunpúr, to whom Bihár then belonged. *Vide* 'Chronicles,' pp. 312 to 317.

کود اندر عهد سلطان جهان محمود شاه حاکم خطه ضیاء الحق بنا این خانقاہ  
هفتصد نه با نود از سال هجرت رفته بود شد تمام این خانقه بار اضعیفان را پناه

1. During the reign of the king of the world, Mahmúd Sháh, Ziyá ul Haq, governor of the province, built this *Khánqáh*.

2. Seven hundred and ninety-nine years had passed since the Hijrah, when this asylum was completed. May it be the refuge of the weak! (A. D. 1397.)

Nos. 40 to 42. *The Mahmúd Sháh (of Jaunpúr) Inscriptions of Bihár.*  
(A. H., 847 and 859.)

From the preceding inscriptions we see that Bihár, in the 8th century of the Hijrah, belonged to the Dihlí empire. With the establishment, immediately afterwards, of the Jaunpúr kingdom, it was separated from Dihlí. Bihár with Qanauj, Audh, Karah, Dalamaui, Sandelá, Bahráich, and Jaunpúr, had since 796 been in the hands of Malik Sarwar Khwájahsará, who had the title of 'Sultán ushsharq,' or 'king of the East.' He does not appear to have struck coins, and the fact that the preceding inscription does not mention his name, confirms the statement of the histories that he did not assume the ensigns of royalty. He was succeeded by his adopted son Malik Qaranful,\* whose elder brother Ibráhím ascended the throne of Jaunpúr in 804, under the title of Sultán Shamsuddín Abul Muzaffar Ibráhím Sháh. After a reign of forty years, he was succeeded by Náçiruddín Mahmúd Sháh (844 to 862), to whose reign the following three inscriptions belong.

The inscriptions do not mention Mahmúd's *kunya*; the coins (Thomas, *Chronicles*, p. 322) do not even give his first name. But as Náçiruddín Mahmúd Sháh of Jaunpúr is the contemporary of, and has the same name

\* This word is generally derived from the Greek *caryophyllum*, a clove; but the *Ghiyásullughát* derives it more correctly from the Hindí *karn*, 'ear,' and *phúl*, flower, because women and eunuchs often put a clove into the lobe of the ear. An ear-ornament, resembling the head of a clove, has also the same name. It is possible that Malik Qaranful, like Malik Sarwar, was a eunuch.

as Nāṣiruddīn Mahmūd Shāh (I) of Bengal, care is to be taken not to confound the two.\*

The first of the following three inscriptions belonged to a mosque which stood opposite to the Chhoṭā Takyah, on the opposite bank of the Adyānadī, in Bihār. The mosque has disappeared; only a large square stone platform is left, where the slab was found.

The second and third inscriptions belonged to the ruinous Pahārpūr Jāmi' Masjid.

## No. 40.

بسم الله الرحمن الرحيم \* قال عليه السلام من بنى مسجدا لله بنى الله له  
بيتا في الجنة ۱۱

شد بتوفیق الهی و ز طفیل مصطفی مسجد جمعه بعد شاه دین پور بنا  
شاه محمود ابن ابراهیم عادل شاه آنک کشور از شاهان ستاند باج نخشد برگدا  
بانی این مسجد آن مسند شریعت هست کو ذات پاکش قره العین نبی و مرتضا  
سرور و مدرجهان آن سید اجمل که شد ملک و ملت دین و دولت را دراو انجا  
کرده فرمایش بناء خیر ملک الشرق کآن مقطع داور دین خطه نصیر ابن بها  
این بنا شد استوار از طاق کسری در بهار کعبه در عظمت برفعت بیت معمور علا  
غرغ ما در چپ بد هشد در چهل هفت سال گاندرین مسجد اقامت شد بنائید خدا

In the name of God, the merciful and the clement. He upon whom be peace (the Prophet) says—"He who builds a mosque for God, for him will God build a house in Paradise.

1. By divine grace and for the sake of Muṭṭafā [the Prophet], the Jum'ah mosque was built in the reign of the faith-nourishing king

2. Shāh Mahmūd, son of Ibrāhīm the Just, a king who takes realms from kings, (and) gives beggars tribute.

3. The builder of this mosque is the great lawyer, who is pure in nature, the beloved of the Prophet and of Murtazā ('Alī),

4. The chief and the centre of the world, the perfect Sayyid, with whom realm and faith, religion and the royal house, take refuge,

5. (Who) ordered this building (to be erected), he the best in the Eastern (Jaunpūr) kingdom, the Jāgirdār (muṭṭafī), the lord of this district, Naqir ibn i Bahā.

6. This building in Bihār is stronger than the portico of Kisrá; it is a Ka'bah in grandeur, and in loftiness the edifice of sublimity.†

7. It was on the 1st Rajab, of the year 847 A. H., [25th October, 1443, A. D.] when with the assistance of God the first prayer was read (iqdmat shud) in this mosque.

\* The Jaunpūr Mahmūd Shāhī coins generally have the word *sulṭānī*, and allude to the investiture by some Khalīfah.

† The phrase استوار از طاق کسری in line 6 is a Hindī construction for the Persian Comparative.



## No. 41.

بسم الله الرحمن الرحيم \* قال عليه السلام من بني مسجد الله بنى الله له  
بيتا في الجنة \*

بارك الله در زمان ناصر دنیا و دین شاه محمود بن ابراهیم شاه راسنین  
صفدر گیهان پناه مملکت صدر کریم یافتہ توفیق خیر از فضل رب العالمین  
مسجد جامع بنا کرد آنچنان کاندرجهان طاق بنیاد آمدش با ملا و عابدی همنشین  
منبر و محرابش از فرط علو مرتبه یافت آن رونق کہ تحسین میکند روح الامین  
وین ندا از عالم بالا همی آید فرود هذہ جنات عدن فادخلوها خالدین  
چارشنبه بیستم هفتم مه ز ایام صیام هشتاد و پنجاد و نه بودست تاریخ از سنین ۸۵۹  
در بقاع خیر او احمد همی خواند نجان روح پاک شیخ شرف الحق والدین رامعین

In the name of God, &c., (as above).

1. Blessed be God, in the time of Nāṣiruddunyā waddīn Shāh Mah-mūd, son of the righteous Shāh Ibrāhīm [of Jaunpūr],
2. The hero of the world, the refuge of the kingdom, the noble chief, who through the mercy of the Lord of the Universe has found grace to do good,
3. Built this Jāmi' Masjid in such a way, that on earth the arch of its structure dwells together with the moon and the fish.\*
4. Its pulpit and niche, from the excess of the loftiness of (their) dignity, have received such a lustre that even the Rāḥ ul Amīn (the warden of Paradise) has approved (of them).
5. And from the upper world, the call comes continually down (to earth), 'This is the garden of Eden, enter it (and live in it) for ever.'
6. Wednesday, the 27th of the month of fasting (Ramazān) of the year 859 is the date of its erection (14th September, 1455, A. D.).
7. Ahmad (the Prophet) sincerely (*bi-jdā*) desires to protect this religious building for the sake of the pure spirit of Shauikh Sharaf ul-haq waddīn.†

## No. 42.

بسم الله الرحمن الرحيم \* قال عليه السلام من بني مسجد الله بنى الله له  
بيتا في الجنة //

مسجد جامع و تفریق خداوند الا و ز طفیل مصطفاء صاحب تمکین و جاد  
شد بعد دولت شاهي که صیت عدل او مغرب و مشرق گرفت از پشت ماهي تابما  
آنکه پور شاه ابراهیم عادل سرفراز آفتاب سلطنت شاه جهان محمود شاه

\* I. e., the building is so high, that it touches the moon, and its foundation is so deep, that it touches the fish, upon which the earth is supposed to rest.

† The metre is as bad as the poetry. To get out the metre, we have to read *shar* for *sharaf*—which is Hindustānī, and have to scan *haqqa waddīn*.

.. .. .  
 .. .. . نزهت بیت المقدس حرمت بیت الحرام  
 بندة فضل الله نبشته بیست هفتم زمیام هشتصد و پنجاه و نه تاریخ بود و سال و ماه

In the name of God, &c.

1. The Jāmi' Masjid, by the grace of God the Lord, and for the sake of Muṭṭafā, the Lord of power and dignity,
2. Was (erected) during the reign of a king, the fame of whose justice surrounds the west and the east, (extending) from the back of the fish to the moon.
3. Namely, the son of Shāh Ibrāhīm the Just, the exalted, the sun of Royalty, the king of the world, M a h m ū d S h ā h (two distichs illegible).
6. The glory of the holy temple (in Jerusalem), the honor of the Haram (the temple in Makkah) .....
7. The slave Fazlullah wrote this on the 27th day of the Fast, A. H. 859 (10th September, 1455, A. D.)

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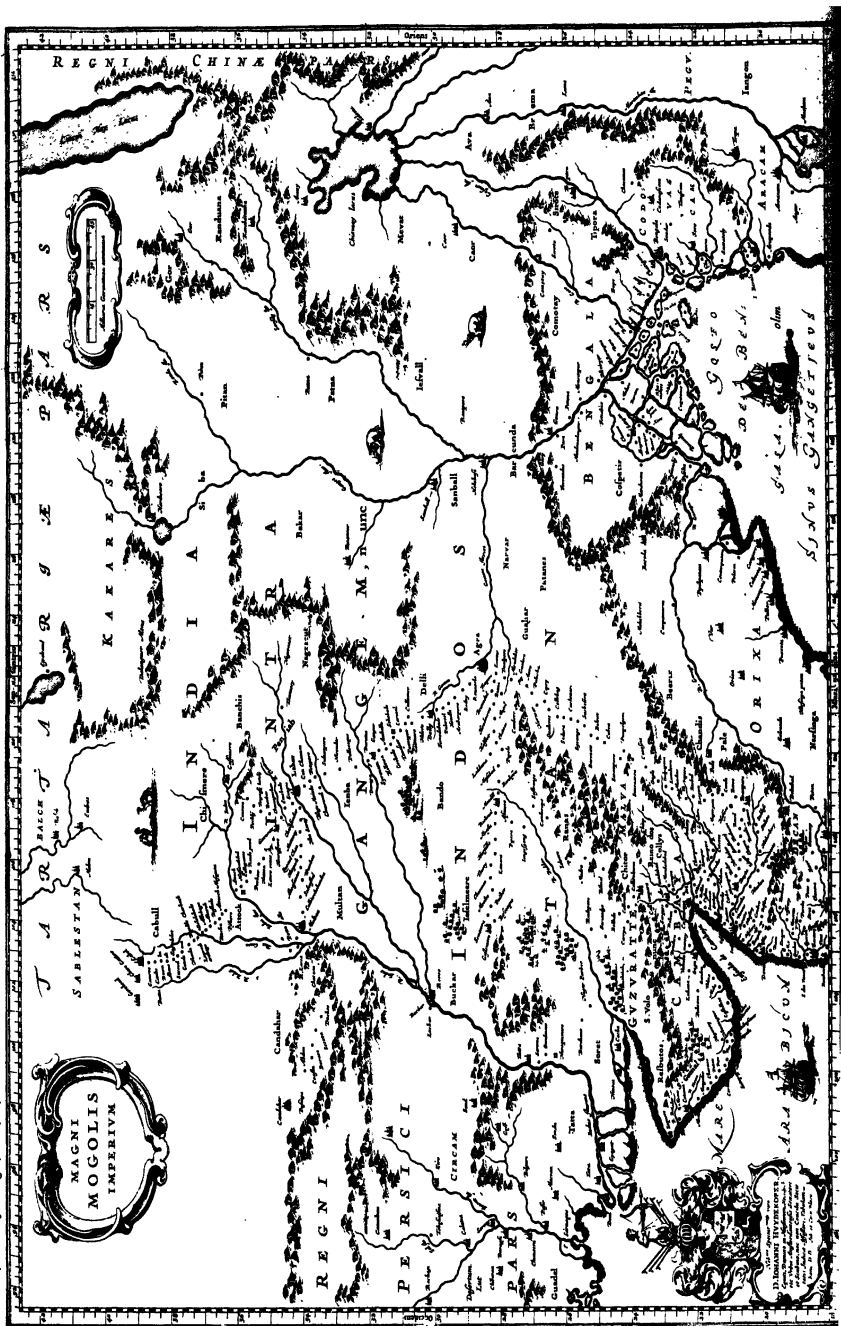
I now bring this essay to a close. It has extended over more pages than I originally had intended. I hope in a short time to put together the collection of inscriptions belonging to the Pathān and Mughul periods, received by the Society from General Cunningham and Dr. J. Wise, to whose unwearied exertions Bengal History owes so much. In the meantime it would be well if other members also, and all such as take an interest in the subject, would send rubbings and coins to the Society; for in the absence of written histories it is only from mural and medallie remains that we can expect to gain a correct knowledge of the history of Bengal.

*Table of the Independent Muhammadan Kings of Bengal, from A. H. 739 to 944, or A. D. 1338 to 1538.*

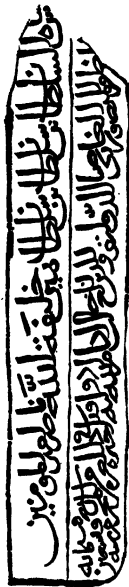
		Statements of the Historics.		Ascertained Dates		Probable duration of reign.	REMARKS.
		Duration of reign.	Dates.	by Coins.	by Inscriptions.		
1	Fakhruddin Abul Muzaffar Mubarak Sháh,.....	2 years and some months.	739 to 741	739, 741 to 750.	none.	739 to 750	Eastern Bengal.
2	Ikhityáruddin Abul Muzaffar Ghází Sháh, (son) .....	not mentioned.	none.	753.	none.	751 to 753	Do.
3	'Aláuddin Abul Muzaffar 'Alí Sháh,....	1 y. and 5 m.	none.	742, 744 to 746.	none.	740 to 746	Western Bengal.
4	<i>A. The House of Ilyás Sháh.</i>						
4	Shamsuddin Abul Muzaffar Ilyás Sháh, .....	16 y. and some m.	none.	Western Bengal, 740, 744, 746 to 758; Eastern Bengal, 753 to 758.	none.	740 to 759	
5	Abul Muja'hid Sikandar Sháh, (son) ...	9 y. and some m.	none.	As prince, 750 to 754; 759 to 761; 763 to 766; 770 to 773; 776; 779 to 783, 784 to 792.	Rejah, 770.	759 to 792	
6	Ghiyásuddín Abul Muzaffar A'zam Sháh, (son) .....	7 y. and some m., or 16 y. 5 m. 3 d.	to 775	772; 775; 776; 790 to 799.	none.	792 to 799	
7	Saifuddin Abul Muja'hid Hamzah Sháh (son), .....	10 y., or 7 y., or 3 y. 7 m. 5 d.	to 785	804.	none.	800 to 804	
8	Shamsuddin, .....	3 y. and some m., or 3 y. 4 m. 6 d.	to 788	none.	none.	804 to 808	

<i>B. The House of Rājāh Kāns.</i>						
9 {	Rājāh Kāns, .....	7 years.	none.	none.	} 808 to 817	
	Shihābuddīn Abul Muzaffar Bāyazīd Shāh, .....	not mentioned.	812, 816	none.		
10	Jalāuddīn Abul Muzaffar Muḥammad Shāh, (son) .....	17 years.	818, 821, 831	none.	817 to 834	
11	Shamsuddīn Abul Mujaḥhid Ahmad Shāh, (son) .....	16 or 18 years.	836	none.	834 to 850 [or to 846 ?]	
<i>C. The House of Ilyās Shāh restored.</i>						
12	Nāṣiruddīn Abul Muzaffar Mahmūd Shāh (I), .....	32 or 27 years.	846	861; Sha'ban, 863; 28 Zil Hijjah 863.	846 to 864	
13	Rakundīn Abul Mujaḥhid Bārbak Shāh, (son) .....	17 or 16 years.	873	860 (as prince); Safar, 865.	864 to 879	
14	Shamsuddīn Abul Muzaffar Yūsuf Shāh, (son) .....	7 y. 6 m.	883, 884	882, 884, 885.	879 to 886	
15	Sikandar Shāh (II), (son ?) .....	2½ days, or 1 day.	none.	none.	886	
16	Jalāuddīn Abul Muzaffar Faṭh Shāh, (son of No. 12) .....	7 y. 5 m.	886	886, 887, 888, 889; beginning of 892.	886 to 892	

		Statements of the Histories.		Ascertained Dates		Probable duration of reign.	REMARKS.
		Duration of reign.	Dates.	by Coins.	by Inscriptions.		
	<i>D. The Habshi Kings.</i>						
17	Sultān Shāhīdāh Barbak, the Eunuch,	8 or 6 or 2½ m.	none.	none.	none.	893	
18	Saifuddin Abul Muzaffar Firūz Shāh (II), .....	3 years.	to 899	893	none.	893 to 895	
19	Nāciruddin Abul Mujāhid Mahmūd Shāh (II), (son of No. 16?) .....	1 year.	none.	illegible.	23rd Rabi' ... (?)	896	
20	Shamsuddin Abul-Naqr Muzaffar Shāh,	3 y. 5 m.	to 903	896	898	896 to 899	
	<i>E. The House of Husain Shāh.</i>						
21	'Alāuddin Abul Muzaffar Husain Shāh,	27 y., or 29 y., or 29 y. 5 m.	to 927* (929?)	899, 900, 912, 914	903, 907, 908, 909, 911, 915, 916, 918, 919, 922, 923.	899 to 927 (929?)	* mentioned in Bardani as reigning in 901.
22	Nāciruddin Abul Muzaffar Naqrāt Shāh, (son) .....	13 y., or less, or 16 y.	to 939	922, 924, 927	929, 930, 933, 936, 937.	927 (929?) to 939	
23	'Alāuddin Abul Muzaffar Firūz Shāh (III), (son) .....	3 months	none.	939	939	939	
24	Ghīyāsuddin Abul Muzaffar Mahmūd Shāh (III), (son of No. 21)—de- feated by Sher Shāh, .....	none.	to 944, dies 945	943	941	940 to 944	



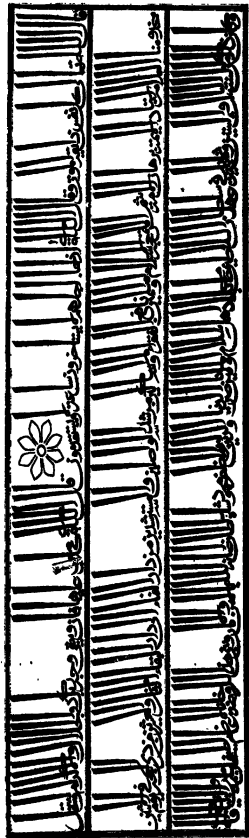




No. 1 & 2. The Kai Kaus Inscription of Kagol, A. H. 697.



No. 3. The Sikandar Shah; Inscription of Hazrat Panduah, A. H. 770.



No. 4. The Nagiruddin Mahmud Shah (I) Inscription of Gaur, A. H. 863.

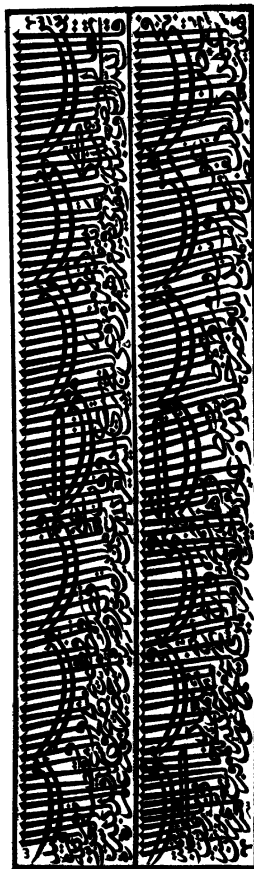






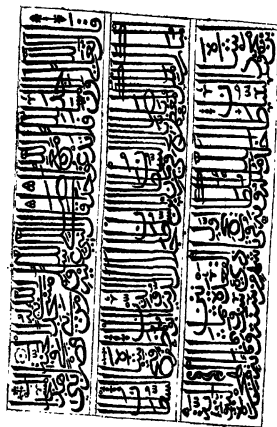


No. 1. The Yusuf Shah Inscription, of Panduah (Hugh District), A. H. 802

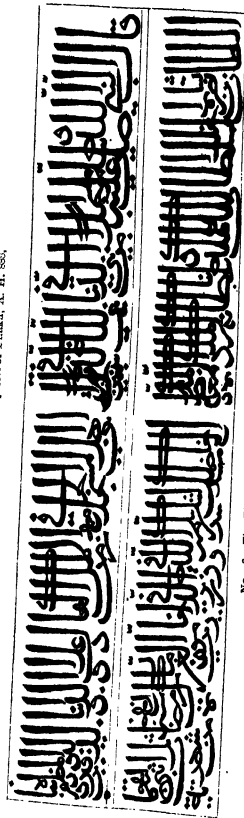


No. 2. The Musadhar Shah Inscription, of Harai Panduah, A. H. 808





No. 1. The Fath Shah Inscription of Clakka, A. H. 885.



No. 2. The Firuz Shah (III.) Inscription of Kalnah, A. H. 898.



No. 3. The Nigiruddin Mahmud Shah (II.) Inscription of Hadrat Fardus.





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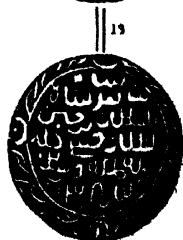
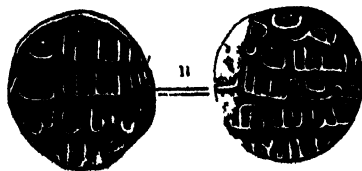
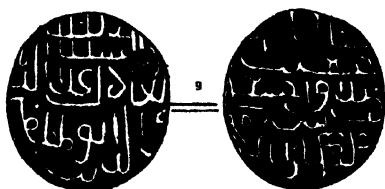
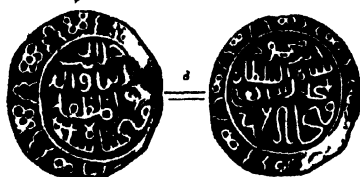
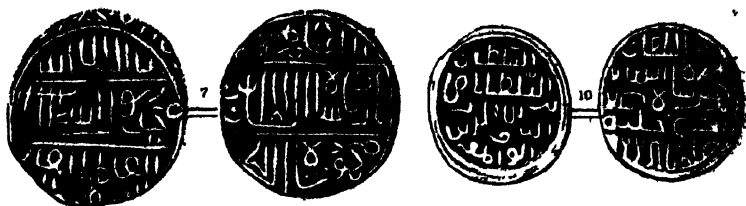


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JOURNAL  
OF THE  
ASIATIC SOCIETY

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Part I.—HISTORY, LITERATURE, &c.

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No. IV.—1873.

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*Note on two Muhammadan Coins.*—By THE HONORABLE E. C. BAYLEY,  
C. S. I.

I have the honor to bring to the notice of the Society two fine gold Muhammadan coins which I have lately seen. They are both as yet undescribed.

The first is a gold coin of Nāṣir-uddīn Khusrāu, the usurper who ascended the throne of Dihlī after the assassination of Qutb-uddīn Mubārak in 720 A. H., and reigned a little more than four months.

The coin is in beautiful preservation and weighs about 169 grains.

It is of the same type as the silver coin, described as No. 155 of Thomas' 'Pathan Kings.' The marginal inscription is, however, complete and runs,

ضرب هذه السكة فيحضرت دهلي في سنة عشرين وسبعماية

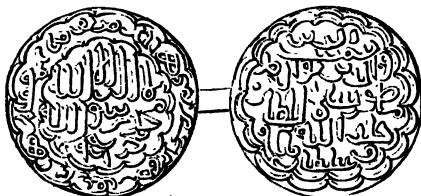
In the centre, too, of the reverse, the word preceding "الرحمن" reads clear as "ناصر" "Nāṣir ul-rahmān." The drawing of the original of Mr. Thomas' coin as given in the plates (Pl. iii, fig. 73) seems as if the latter had been imperfect at this word. The legends are, therefore, probably the same, except as to the denomination of the coin given in the margin.

The gold coin which I have above described, is in the possession of Col. J. J. H. Gordon of the 29th Regiment Native Infantry, who procured it at Peshawar.

The other coin is also a Muhammadan coin, but belongs to a later date and another mint. It is a coin of the Bengal usurper Muzaffar Shāh, and

also greatly resembles the silver coin of that Monarch, figured by Marsden, (Pl. xxxv, fig. dxcvii) and attributed by him to Shams-uddin Altamsh.

Major Waterhouse has been good enough to photograph this interesting coin, and I enclose a copy of the photograph.



I give the legend as I read it in full, but there may be some doubt as to one word and as to the date, of which more presently.

REVERSE.

Muhammadan profession of faith,  
or "Kalimah," with the date.

OBVERSE.

شمس الدنيا والدين ابرالظفر مظفر شاه  
سلطان خلد الله ملكه و سلطنته

Margin—the names and titles |  
of the four companions.

The first difficulty is as to the title "ابوالظفر." The legend in this line and that below it, is very much cramped at the end, and is with difficulty legible. I read this word therefore with some doubt, it is possibly meant for *ابوالمظفر*.

Unfortunately, the chief doubt of the reading centres in the *date*. The numerals are preceded by two scarcely legible groups of letters, which I take to represent *في سنة*, and these cover the numerals, which are very ill executed. Attached to the marginal scroll on the left may be seen a triangular mark. This may be either a part of the scroll itself, or it may be intended for the cipher A or 8.

On the other hand, the extreme right hand cipher, if examined by a glass, resolves itself clearly into two, and it may therefore either stand for 1 or 6, or for • and 1, i. e., "0" and "1." The date may therefore be read as 901, or 896, indifferently.

This is unfortunate, for the date of this king is uncertain. We know but little of him. The main facts which seem to be clear are, that he murdered his immediate predecessor Mahmūd Sháh, and at once ascended the throne. After some time a rebellion arose, headed by his eventual successor 'Alá-uddin Husain. It would appear, moreover, Muzaffar Sháh was before long driven into the fortified city of Gaur, and that he held his own within this refuge for a very considerable time, defeating all the attacks of his opponents. In the end, however, they triumphed; one account says by the treachery

of his courtiers, whom he had disgusted by his cruelty ; another story is that emboldened by success he rashly hazarded a battle outside his fortification, and fell in the contest.

The popular dates assigned to this king vary very much, but it is specifically stated that his reign lasted three years and five months.

One set of dates, that most generally accepted, carries his reign as far down as 903, which would place his accession in either the beginning of 899 or end of 898, A. H. ; but, as will be seen, this is probably too late.

The only one point on which there is no doubt is that he erected a building at Gaur in 898. This is testified by the inscription published in the Society's Journal, Vol. XLII, p. 291, by Mr. Blochmann from the Gaur impression furnished by General Cunningham.

Another piece of evidence, but a less conclusive one, is the coin published by Marsden, Pl. xxxviii, No. DCCXCII, and which is dated in 899. It is attributed by Marsden to 'Alá-uddín Husain ; but if correctly attributed, as is probable, it is, I think, indirect evidence, *not* that Muzaffar Sháh was then dead, but that he was still alive in possession of Gaur. For *this* coin of 'Alá-uddín is struck at Fathábad, a mint of which I believe no other specimens exist, whereas his later coins bear the mint mark usually of "Jannatábád," the well known mint name of new Lak'hnaúti or Gaur. It is of course more than probable that 'Alá-uddín Husain, in the flush of victory and with his adversary penned up and beleaguered in a fortress, at once assumed, while himself in camp or at some obscure town, the regal style and struck coins, while Muzaffar Sháh might still have done the same inside his strong fortress.

The facts we have then are these : Muzaffar Sháh was reigning in 898. He was probably still reigning but penned up in Gaur at some period in 899. He reigned three years and five months.

All of these facts are consistent with the dates either of 896 or 901 A. H., but in either case this coin must mark *one* extreme limit of Muzaffar's Sháh's reign. My own feeling is rather to read the date as 901 A. H., resting mainly on the general assignment of a later date to him by native historians, and on the appearance of the date itself. I am bound to state, however, that such authorities as General Cunningham and Mr. Blochmann prefer to read 896.

This coin was found at Gaur some years ago, and is in the possession of E. Lewis, Esq., C. S.

*Notes on Two Copper-plate Inscriptions of the Twelfth Century, A. D., recording Grants of Land by Govindachandra Deva of Kanauj.—By BA'BU RA'JENDRALA'LA MITRA.*

In April last, I received from Mr. E. T. Atkinson of Allahabad two copper plates bearing Sanskrit inscriptions, together with a transcript in modern Devanāgarī and an English translation of one of them. Mr. Atkinson informed me that the plates "had been found in the village of Basāhi, about two miles north-east of the tahsīl town of Bidhunā, in the Etāwah District. The village is in a small *kherā* or mound into which a Thākur cultivator was digging for bricks to build a house. He came on the remains of a pakkā house, in the wall of the *dālān* of which were two recesses (*tūk*), and in each of these recesses was a plate."

No. 1, the smaller of the two plates, measures 16 inches, with an average breadth of 10½ inches. It has a clasp rivetted on the middle of its upper edge to which is attached a chain of two rings of unequal thickness, holding a heavy bell-shaped copper seal. The legends on the seal are a figure of Garuda, the vehicle of Vishṇu, and a conch shell, a rude imitation of the famous *pāñchajanya* conch or war trumpet of that divinity, with the name of Śrī Govindachandra Deva in the middle. The seal is peculiar to the last line of the Kanauj kings, and implies that those who adopted it were the especial followers of the Vaishṇava faith.

The writing on the plate extends to twenty-two lines, the last beginning at about the middle of the lower edge. The character is the well-known Kuṭila, deeply cut, and in an excellent state of preservation.

The record was first sent to Paṇḍit Bāpudeva Śāstri, who had it deciphered and translated by one of the paṇḍits of the Sanskrit College of Benares. The transcript prepared by the paṇḍit is generally correct, and is annexed below with a few slight alterations; but the translation, being loose and periphrastic, has been replaced by another.

The subject of the inscription is the grant, to an astrologer named Ahneka, of a village named Vāsābhi, in the canton of Jiāvani, in the Etāwah district. The donor is Rājā Govindachandra Deva of Kanauj, and the date of the gift, Sunday, the 5th of the waxing moon in the month of Pausha, Samvat 1161, corresponding with the end of December in the year 1103 of the Christian era. The boundary of the village is given in full, and Mr. Aikman, who communicated the plate to Mr. Atkinson, identifies the place with the modern *kherā* village of Basāhi where the record was found. He says, "The only name like Jiāvani in Pargannah Bidhunā is Jiva Sīrsānī, about ten miles south-east of Bidhunā, which has a large *kherā*. The name

Bándhama still exists as the name of a village about  $2\frac{1}{2}$  miles east of Basáhi. Pusáni may be identified with Pusaoli, two miles south of Basáhi. For Varavvalá the local paṇḍits give Belgur, two miles southwest; for Banthara, two miles west of Basáhi. Sávalada is apparently the modern Sabhad,  $2\frac{1}{2}$  miles N. N. W. of Basáhi. All these are kherá villages with which the whole north-east of the Bidhuná Parganah appears to be studded. Tradition has it that Sahad in the Phaphúnd Parganah, which is now but a kherá, was the site of the elephant stables of the rulers of Kanauj, and, though there is now no vestige of a wall, the villagers still point out the sites of the gates, as the Dihlí Darwázah &c."

The attesting witnesses to the gift were the high priest, the accountant general, and the warder of the palace, the conveyancer being a man of the name of Vijaya Dasa, son of Paṇḍit Kuke.

No. 2 measures eighteen inches by eleven and a half. It originally had one or more rings and a seal attached to its top: but they are now lost. Its corners are broken, and the inscription, which extends to twenty-four lines, has been very much defaced by rust, making it quite illegible in some places. Owing to this the paṇḍit, who deciphered the first plate, could not make anything of the record. Careful clearing and an impression taken under a copper plate printing press, have, however, enabled me to read a good part of it, and filling up such portions as are irretrievably lost of the preamble, which is the same as in a record published in the twenty-seventh volume of this Journal, and the concluding imprecatory and commendatory verses from several land grants already published, I have succeeded in restoring the record with the exception of a few proper names of places which are not of any material importance. The portions taken from other records have been enclosed in brackets in the subjoined transcript.

The subject of the patent is the gift of two villages by Govindachandra to a Thákur of the name of Devapála S'armá, son of Thákur Udyi, and grandson of Thákur Yogi, of the Káśyapa clan. The title of the donee and his ancestors appears in its ancient form of Thakkura. The date of the gift is the third of the wane in the month of Phálguṇa, Samvat 1174, or just thirteen years after the first grant. The dates are given, in both cases, both in letters and figures, and so there is no doubt whatever about the accuracy of my reading.

The preamble of the first grant opens with a reference to a dynasty of which one Gáhaḍavála was the founder, and Karlla the last prince. One of the descendants, some unknown generations removed from Gáhaḍavála, was Mahíála, and after some generations Bhoja, who does not appear to have been the immediate predecessor of Karlla. Of these several names, that of Bhoja is the most important. As a sovereign of Kanauj, he must be one of the two Bhojas of the Śáran plate noticed by me in my paper "on a Land

Grant of Mahendrapāla Deva of Kanauj,"\* probably the last who was the same with the "Lord Paramount" named in the Gwāliar inscription translated by me and included in my paper on the "Vestiges of the Kings of Gwalior,"† and noticed also in my essay on the "Bhoja Rājā of Dhār and his Homonyms."‡ The date of the last Bhoja of Kanauj was 885, A. D.§ and that of the Bhoja of Gwāliar 875, A. D.|| showing an interval of only ten years which may reasonably be supposed to have been included in a single reign. This identification would make the dynasty of Gahadavāla to be the same with that of Devasākti, which, according to my calculation, commenced in the year 779, A. D.¶

When Karlla, the last prince of the dynasty, died, cannot be ascertained; but it must have been at about the third quarter of the eleventh century. The inscription notices a revolution immediately after his death; perhaps he was destroyed by a rising of his own people, who expelled his descendants from Kanauj and made over the kingdom to Chandradeva, or at least helped him to take it.

The dynasty of the last named prince was founded by Yasovigraha, whose name occurs in a large number of inscriptions; his date, however, is nowhere satisfactorily settled.\*\* His son Mahichandra was the father of Chandradeva. No inscription of either of these has yet been met with. Of Madanapāla, the son and successor of Chandradeva, an inscription has been published, bearing date the 3rd of the waxing moon in the month of Māgha, Samvat 1154 = 1097 A. D.†† According to the inscription under notice he was the reigning sovereign in 1103, A. D., when his son Govindachandra, as heir apparent, gave away the village of Basāhi.

The second inscription describes the dynasty of Yasovigraha, but makes no mention of the line of kings which preceded it. According to it Govindachandra was reigning sovereign or Mahārāja on the 3rd of the wane in the month of Phālguna, in the Samvat era 1174 = A. D. 1117. So he must have succeeded his father between 1103 and 1117 A. D. On the 6th of the wane in the month of Māgha, Samvat 1182 = A. D. 1125, he gave away a village in the canton of Haladoya,‡‡ and his reign may be assumed to have

\* Ante XXXIII, p. 321.

† Ante XXXI, p. 391.

‡ Ante XXXII, p. 91.

§ Ante XXXI, p. 469.

|| Ante XXXIII, p. 96.

¶ Ante XXXII, p. 409.

\*\* A summary of all the Yasovigrahas noticed in inscriptions will be found in a footnote to a paper entitled "Of two Edicts bestowing land recorded on plates of copper." Ante XXVII, p. 217.

• †† Ante XXVII, p. 218.

‡‡ Ante XXVII, p. 247.



extended to the close of the third decade of the twelfth century, and probably to a much later period. His son and successor was Vijayachandra. He is said to have died in 1168 A. D.,\* leaving the kingdom of Kanauj to his son Jaychandra, the last king, from whom the country passed to the Muhammadans. There are several copper plate patents extant of this sovereign. Six of them found by Captain Fell at Benares, and now in the Library of the Asiatic Society, bear dates as follow :—

Nos. 1008-3 and 6, Samvat 1233 A. D. 1175.

No. 1008-4, Samvat 1234 = A. D. 1176.

Nos. 1008-5, 7 and 8, Samvat 1236 = A. D. 1178.

Lt. Col. Caulfield's Faizábád plate,† Samvat 1243 = A. D. 1187.

His overthrow by the Muhammadans took place in A. D. 1193, which gives a period of about twenty-six years for his reign.

As the history of these sovereigns has been discussed at length by Colebrooke, Wilson, and others, and I have at present neither the time nor the inclination to write a monograph, I shall close these brief notes with a few remarks on the nature of the gift and on the various kinds of rights, taxes, and cesses which they bestowed on the donees.

The gifts, as a rule, are absolute, and to last, in the metaphorical language generally used are such occasions, "as long as the sun and moon will endure." Their resumption is also prohibited with dire imprecations. But no where is any mention made of the right of actual possession of the donor. The first impression produced on reading a copper-plate grant is that the proprietary right of the donor is conveyed to the donee, but looking to the fact that almost invariably there is a clause in the deed which says "the inhabitants and local officers, should render to the donee all rents, taxes," &c., or other words to that effect, the conclusion becomes evident that the right conveyed is, like that of the zamíndárs, limited to rents, &c., and does not extend to actual possession, which is taken for granted will rest with the tiller of the soil, except of course in the cases of unoccupied land, forests, mines, wastes, &c., which are frequently separately mentioned. This peculiarity in the land tenures of India was first pointed out by Colonel Sykes, and it shows the existence of zamíndári rights of middle men apart and distinct from the occupaney rights of the cultivators. It shows also that the right of possession did not rest with the king. He was entitled to demand revenue or *kara*, and cesses, but not to dispossess the occupant at will and pleasure. However extraordinary this may appear to persons who associate the idea of Indian sovereignty with every thing that is arbitrary and autocratic, it is a fact which is in perfect keeping with the laws of the land.

\* Ante XXVII, p. 218.

† Colebrooke's *Essays*, II. pp. 289, 295, and 296. *Journal, As. Soc.*, II., pp. 341. and 342; XXVII, p. 218. Ante X, p. 98.

According to the *Tattvakaumudi*, there were formerly four classes of tax-gatherers intermediate between the actual occupant on the one side and the king on the other; these were the Grāmādhyaksha, the Kautumbika, the Vishayādhyaksha, and the Sabhādhyaksha, and the revenue passed successively through their separate hands before it reached the king.\* Whether these persons were paid officers, or owners in some sense or other, I cannot ascertain, but in the *Vivāda Chintāmani* a rule is quoted which says, "A gift of land made by the king by taking it from its proprietor through anger or avarice, or under a pretext, (*i. e.* not lawfully resumed) is illegal."†

There are laws quoted in it of the rights of squatters and lease-holders, apart from those of permanently fixed cultivators, who held the position of the ryots of the present day.‡ This becomes the more apparent from the nature of the right of the king in land as defined by Ś'rikriṣṇa Tarkā-lankāra in his commentary on the *Dāyabhāga* of Jimutavāhana. "When the owner of one kingdom," says he, "buys a country or the like from the owner of another, the right acquired in his purchase is that of realising revenue, which the seller had, and not anything similar to the right acquired in land by inheritance, which is also connected with land, and which is not of the same nature with the former, and cannot be produced by its transfer, the discordance being in their natures."§ Accordingly, we find in one of the Sanehi inscriptions a vassal of Chandra Gupta purchasing from one of his own subjects a piece of land, at the legal rate, for 12,500 dīnārs for a Buddhist temple.||

The rights conveyed by the patents also indicate this very clearly. The first right named in the records under notice is called *bhāga* or "a share" of the produce. It is, I believe, the same with the *bhūgaḥjota* of the present day, in which an owner allows the cultivation of his land by a farmer on the understanding of receiving a share (*bhāga*) of the produce, the cost and labour of cultivation being borne by the latter. The share varies from four to ten-sixteenths, according to the nature of the soil and other circumstances; but it is ordinarily fixed at half the produce, which in the case of paddy is sometimes meant to include the straw, and sometimes to omit it. Owners of land are occasionally required to supply seed grain; but

\* यथा हि ग्रामाध्यक्षाः कोट्यम्बिकेभ्यः करमादाय विषयाध्यक्षाय प्रयच्छन्ति, विषयाध्यक्षा मभाध्यक्षाय, न च भूपतये इति ।

† Prasannakumar Tagore's Translation, p. 121.

‡ Ibid., pp. 130-31.

§ अत एव राज्यान्तराधिकारिणः स्वकारान् अन्यस्यपतिना क्रीते राज्यान्तरादौ विमोक्षस्व स्वजातीयं करप्रक्षोपयोगिसत्त्वेन तस्य तत्र जायते, न तु दायप्रतिग्रहानभूत्यादिद्वितिसत्त्वस्वजातीयस्वत्वं तत्र भूत्यादौ तथाविधसत्त्वस्त्वेन तद्विरोधान् तादृशस्वत्त्वान्तरात्म्यसम्भवात् समानजातीयोक्तयोर्विरोधान् ।

● Bharatachandré Siromani's edition of the *Dāyabhāga*, p. 18.

|| Ante Vol. VI, p. 455.

this is not common. At the time of Govindachandra, the share was, I believe, a tenth, as I find in the inscription No. 1 the word *bhāga-kūṭaka-das'a*, which means the share (*bhāga*) for a plough-share (*Kūṭaka*) to be *das'a* "ten," the "ten" meaning either ten hundredths or one tenth. The ordinary practice of calculating by fractions of the rupee or sixteenth has, I imagine, not been adopted here, as the very next word *bandha viṅś'ati* twenty or a twentieth for mortgages, would in that case mean twenty-sixteenths, which would be absurd. One-twentieth or twenty-hundredths—most probably the former was the rate of cess for mortgages. But whatever the rate the right was clearly limited to rent, and did not extend to actual possession.

The second right of the zemindar is named *Bhoga*, literally meaning enjoyment, but most probably intended to imply usufruct, as in the current terms *Bhogabandhak*, *Bhogalābh*, *Bhogādhikār*, *Bhogasanad*, &c., a mortgage is meant in which the article pledged is permitted to be used in lieu of interest. It might mean the actual possession and enjoyment of the land, but that cannot be the object intended by the conveyancer, for in that case he would not have described it as "payable," and enjoined the inhabitants or ryots to "render it." The condition of payment, or rendering, implies that the land was left in the possession of the ryots, and the donee was still to have some enjoyment of it. This could be effected by allowing the landlord to have the right of using it when the land was left fallow, either as field for grazing his cattle, or taking the grass from the field after the cultivator's crop had been removed from it. A right of this description is enjoyed in the North-Western Provinces to this day; and a case once came up in appeal to the High Court of Calcutta from Behar in which the zemindar claimed the right of taking grass from the field of his ryot, after the ryot had removed his crop. This is indicated in a passage in the *Vivāda Chintāmaṇi* where it is stated that "the produce of seeds thrown from one field into another by a storm or a deluge, is enjoyed by the proprietor of the field,"\* *i. e.*, the produce resulting without the intervention of the ryot is due to the zemindar, even during the currency of a lease, unless otherwise provided for in the lease.

The next is *Kara*, *i. e.*, rent proper or revenue, in which a fixed amount, whether payable in money or kind, has to be rendered for the use of land irrespective of the actual produce at any given time. The standard for fixing the rate was doubtless the produce, but when the rate was once fixed, the produce was no longer taken into consideration.

The next is *Pravani kara*, or a toll on quadrivials, *i. e.*, a toll at turnpikes, it being very unlikely that a traveller was called upon to pay a toll at every cross road. The translator of the Delhi College copper-plate

\* Prasannakumār Tagore's edition, p. 131.

fancies that from the mention of this tax, "it may possibly be inferrible that the impoverishment of the imperial coffers had recently given rise to a new species of fiscal exaction;"\* but the impoverishment is altogether imaginary; there is nothing to show that Govindachandra's reign was financially a bad one, and needed any extraordinary fiscal measures for relief. On the contrary, Govindachandra and his two successors, who exercised supremacy for nearly the whole of the twelfth century, and possessed the finest and richest portion of India, including the Gangetic doab, a good portion of Oudh down to Benares, and an undefinable portion of the tract of country to the south of the Ganges and Jumna from Tikkari to Gwalior, were rich and prosperous, the most distinguished sovereigns of their times, lavish in bestowing entire villages, not unoften two, three, or more at a time, in free gift to Brāhmins, it is extremely improbable that they laboured under pecuniary difficulties. Were the difficulty to be admitted as a fact, still the question would remain, how could the bestowal of the right to raise such a tax relieve the tightness of the imperial exchequer? To make it really beneficial, the donor should have reserved the right for himself, and not given it away to a subject.

These four forms of taxation are mentioned in the second plate, and the grant appears to be limited to the enjoyment of these, which the tenants were to contribute. In the first grant the gift is absolute, including the power of administering justice, the punishment being limited by the nature of the offence, *sadrisāparādha danda*. But even here the tenants are not altogether lost sight of, nor their rights annulled, for it ordains that the share (*bhāga*) for each plough, *kūtaka*, should be ten or a tenth (*das'a : bhāga-kūtaka-das'a*).

The right of the donee in mortgage is fixed at one-twentieth or five per cent., which is somewhat more than the stamp tax of the present-day. He is authorised also to raise a tax for beggars—a poor rate—which is to be equal to a *prastha*, or four *kuḍavas*, which is equal to "forty-eight double handfuls;" but whether that was required to be contributed by every tenant, or for every biggah of land cultivated, I cannot ascertain. The tax is named *agu-prastha*. A similar rate of tax is also fixed for the administration of justice *aksha-paṭala-prastha*. For the watch and ward of the village, a similar rate is likewise fixed. It is called *prātihāra-prastha* or a *chaukidāri* tax, and in some villages of Bengal, it is still current, though the measure of corn given is different. Royalties are also fixed for mines (*ākara*), collection of fragrant grass, meaning evidently the wild *Bená* grass or *Khaskhas* (*turushka-danda*); wild tree-cotton (*dharā*); reeds for mat-making (*kaṭa*); and trade in precious metals and jewels, collectively called *hiranya* or gold. In the translation of the Inscription published in the twenty-seventh volume of this Journal (p. 249), the word *turushka-danda* has been rendered into

\* Ante XXVII, p. 248.

“Mahomedan amercements,” the translator suggesting that it implies that “the encroachment of the northern invaders were gaining head, and that their dominion was becoming to be recognised;” but I cannot accept this version as correct. It assumes the presence in Etawah of such a Moslem population as would be worth taxing; and that is far from being probable. The word *turushka* doubtless means a Turk or a Moslem, and it is undeniable that the incursions of Mahmūd Ghaznavi did leave some of his followers scattered in different parts of India, but they did not make up such a population in villages as to make judicial fines imposed on them of any material value. At any rate such fines do not by any means indicate Moslem sovereignty in India, nor does their imposition by Brāhmins under the orders of a Hindu king in the year 1103 imply its extension. It may be added, that the right of administering justice carries with it that of fining, and the donee who got the right, enjoyed the fines from Hindu and foreign offenders alike, and a special mention of “Mahomedan amercements” was not at all needed. But the most important argument against the theory appears to me to be the position which the word *turushka danda* occupies in the text. It is preceded by *ākara*, “mine,” and followed by *dhara*, “tree cotton,” and *kaṭa* “mat reed,” and one naturally expects it to be the name of some article of produce; and this is supplied by the old meaning of *turushka* “an aromatic substance,” added to *danda*, “a stick,” an aromatic reed. In the western parts of the Burdwan district, where the khas-khas is common, a royalty is to this day charged by zemindars for permission to cut it.

*Transcript of Inscription No. I.*

१०. ॐ नमो भगवते वासुदेवाय ॥

तमायं सर्वदेवानां दामोदरमुपास्यते ।

चैलोक्यं यस्य वक्त्रोवाक्त्रोऽङ्गान्त्यं बलिचयो ॥ १ ॥

वन्दे गच्छवाल्लोके बभूव विजयो नृपः ।

महिषालुतः श्रीमान् नलनाभागमग्निभः ॥ २ ॥

याते श्रीमोजभूषे विभुधवरभूषेवलीमातिथिलं

श्रीकर्णे कीर्तिमैत्रं गतवति च नृपे छात्यये जायमाने ।

भर्तारं यं धरिचो चिद्विबिभूनिभं प्रीतियोगादुपेता

वाता विचल्य पूर्वं समभवद्विह स आपतिसन्मदेवः ॥ ३ ॥

द्विषन्तिप्रतिभतः सर्वान् विधाय विवशान् वन्दे ।

कन्याकुलः करोद्गजा राजधानीमभिन्दितान् ॥ ४ ॥

तमाजनि द्विषद्विषापतिदन्तिभिः सोकीपतिर्मदनवाल इति प्रसिद्धः ।

यिनामिषान् वज्रः समरप्रवन्धाः सन्नतितप्रवतश्चक्रवन्धवन्धाः ॥ ५ ॥

तस्मादजायत नरेवरद्वन्द्वपादारविन्दयुगलो ज्वलितप्रतापः ।

सोशीपतीन्द्रतिलको रिपुद्वन्द्वी गोविन्दचन्द्र इति विभुतराजपुत्रः ॥ ६ ॥

संवत् सप्तमेके एकषष्ट्युत्तरयुगताम्यधिके पौषमासे शुक्लपक्षे पञ्चम्यां रविदिने  
संवत् ११६१ पौषसुदि ५ रवौ ॥

अथेहासक्तिकायां सकलकर्मवलयकारिणां यमनायां स्नात्वा यथाविधानं मन्त्रदेव-  
ज्जपिमनुष्यभूतपितृसुप्रेषित्वा । सूर्ये भङ्गारके सर्वकर्तारं भगवन्तं शिवं विश्वाधारं वासुदेवं  
समभ्यर्च्य कृतवर्धं कृत्वा । जीवावनीपत्तनायां वसभीषामे समस्तमहत्तमजनपदान् रुन्धो-  
धयति । यथा पामोऽयं मया चोन्नतमधूकाद्याकाशपातालसहितः सहस्रापराधदण्डः\*  
भास्करदण्डः, बन्ध, विभ्रति, अग्न्यष्टाक्षपटलप्रस्थ, प्रतीहारप्रस्थाकर, तुल्यदण्डधर-  
कर, चिरण्यसर्वादायसंयुक्तः । पुत्रेभ्यो बान्धवैभ्यः पश्चिमायां वडम्बलाग्रामः दक्षि-  
णस्यां पुष्पेणीग्रामः उत्तरस्यां सोवदग्रामः एवं चतुराष्टाटविशुद्धः । मातापितराम्बनश्च  
यमःपुण्यविहङ्गे जलबुद्बुदाकारं जीवितं दानभोगफलं लब्धं ज्ञात्वा । बह्वचराक्षिने  
गौतमगोत्राय गौतम, अविनाथ, अक्षिरस, विप्रवराय मेमेपौत्राय कुलपुत्राय ज्योतिर्विदे  
प्राश्न्यन्वाङ्मेकाय महाराजपुत्रश्रीमद्भोविन्दचन्द्रदेवेन उत्तरायणसङ्क्रान्ते कुम्भपूतेन हस्तो-  
दकेन चन्द्रार्के यावत् शासनत्वेन प्रदत्तः ।

ये यास्यन्ति मचीर्यते मम कुले किंवा परस्मिन् पुर-  
स्सामेव मयास्त्रिर्विरचितो नादेयसम्पत् कियत् ।

दूतवासावमपि स्वधर्मनिरता दत्तं मया पात्यतां

वायुर्वास्यति तस्यति प्रतपनः श्रुत्वा मुनीनां वचः ॥ १ ॥

वडभिर्वसुधा भुक्ता राजभिः सगरादिभिः ।

यस्य यस्य यदा भूमिस्तस्य तस्य तदा फलम् ॥ २ ॥

स्वदत्तां परदत्तां वा यो हरेत् वसुधराम् ।

स विद्यायां क्षमिर्भूत्वा पितृभिः सह मज्जति ॥ ३ ॥

भूमिं यः प्रतिगृह्णाति यस्तु भूमिं प्रयच्छति ।

तावुमौ पुण्यकर्माणौ नियतं स्वर्गवासिनौ ॥ ४ ॥

तद्वागानां सप्तमेकं वाजपेयशतेन च ।

मवां केटिप्रदानेन भूमिर्हता न शङ्कति ॥ ५ ॥

लिखितश्च पुरोहितश्रीजाम्बुकमेहतकश्रीप्राश्न्यप्रतीहारश्रीगौतमी रषां सप्तम्या पण्डितः  
श्रीकृष्णपुत्रविजयदासेनेति ॥

### Translation of No. 1.

#### Om ! Salutation to the glorious Vāsudeva.

1. I adore Dāmodara, the first among the Gods, the three folds of skin on whose belly are said to be the three worlds in his lap.

2. In the dynasty of Gāhāḍavāla was born the victorious king, comparable to Nala and Nabhāga, the son of the auspicious Mahiāla.

3. When king Bhoja had become an object of sight to the charming wives of the gods, (i. e. died); when the career of king Śrī Karṇa had come to a close, when there was a revolution, then Chandradeva became king. On gaining him, who was like the lord of heaven, for her husband, earth was gratified. He was a protector of the universe.

4. Having brought under subjugation all irrepressible and inimical kings, the sovereign established his reproachless metropolis at Kānyakubja.

5. Of him was born the renowned of earth, Madanapāla—a lion to the inimical elephant Ilāpati, (king of Ilā), who engaged himself in frequent warfare,\* and made the trunks of his decapitated enemies dance (in the battle field).

6. Of him was born the celebrated prince Govindachandra, whose lotus-like feet were adored by hosts of mortal sovereigns—a prince of refulgent might, the ornament of mankind, and the disturber of the enjoyment of his enemies.

On Sunday, the 5th of the waxing moon, in the month of Pausa, of the Samvat year one thousand one hundred and sixty one, Samvat 1163, Pausa, 5th Sudi, Sunday.† Having this day bathed here at Asatika,‡ on the sin-destroying Yamunā,—having offered libations of water to the tutelary divinities, sages, (rishis) men, animals and manes,—having worshipped the sun, the sovereign and glorious lord of all, Ś'iva, and the asylum of the universe Vāsudeva,—having duly made offerings to the fire (the prince) thus addresses all the respectable inhabitants of the village of Vasabhi, in the district or circle (*Pattana*) of Jiyāvanī. This village with all its fields, and orchards of Madhuka and mangoes, together with the sky over it and the region below it, as also the power of administering justice, the right to a tenth for every ploughshare, to a twentieth on mortgages, to royalties or shares (*prastha*) of corn, for beggars, justice, watch and ward, mines, aromatic reeds and gold, along with all other,—the village having on its East the village of Bandhamauni; on its West the village of Vedabhala; on its South the village of Puśāni; and on its North, the village of Śāvahada, thus bounded on four sides—for the increase of virtue and good name of my parents and myself, and knowing life to be as impermanent as a bubble on water and the value of wealth to lie in charity and enjoyment, has been granted as a śāsana for the period of the sun and the moon to the astrologer Brāhmana, Alneka, son of Kulye, and grandson of Meine, of the Bahvrich Śākha (branch) of the Gautama clan (gotra), having Gautama, Avitatha, Angirasa for his threefold *Pravara*, by Govindachandra Deva, son of the Mahārāja, on the winter solstitial conjunction (of the month of Pausa and Māgha) with water held in his hand, and purified by Kus'a grass.

1. With folded hands this is my prayer to all future sovereigns of my and other dynasties, that they should never take any tribute from this village—not even a blade of durba grass. Those who wish to do their duty should, obedient to the mandates of sages, preserve intact my gift, (as long as) the wind blows and the sun continues to shine.

2. This earth has been enjoyed by many kings, including Sagara and others. To whomsoever belongs the earth for the time being, he enjoys the fruit (of such gifts).

3. Whoever robs earth, whether given by himself or others, becoming a maggot, sinks with his parents into ordure.

4. Both he who accepts land and he who grants it, are equally meritorious, and they dwell eternally in heaven.

5. The alienator of land-grants cannot expiate his crime even by (dedicating to

\* The word *prabandha* means both continuous action and a treatise. The latter would imply that the king composed some treatises on tactics, but the second clause would be more in keeping with the former meaning which has been adopted in the text.

† The repetition is due to the circumstance of the date being given first in words and then in figures.

‡ Probably the name of a ghat or a village on the Yamunā.

public use) a thousand tanks, by (performing) a hundred Vājapeya rites, and by giving away in charity ten million heads of cattle.

This was written by Vijayadāsa, son of the Pandit Śrī Kuke, with the consent (or in the presence?) of the family priest Śrī Jāguka, the chief accountant (*Mohattaka*),\* Śrī Brāhmāna, and the warder<sup>†</sup> (*Pratihāra*) Śrī Gautami.

*Transcript of Inscription No. II.*

- १ (सखि ॥ अङ्गुष्ठोत्पलवैकुण्ठ)कण्ठपीठलुठन्करः । संरक्षः सुरतारणे च विद्यः  
(त्रयसेऽसु) वः ॥ १ ॥ आसीदभीतयुतिर्वंशजातस्यापासु(मासासु दिवं गतासु ।  
साक्षाद्विवक्षा(निव
- २ भूरिधात्मा) नात्मा (यशोविप)श्च इत्युदारः ॥ १ ॥ तत्सुतोऽभूत्तदीचन्द्रचन्द्रधाम-  
निभं निजम् । येनापारमकूपारपारे व्यापारितं यशः ॥ तस्याभू(तनयो नयैक-  
रसिकः ज्ञानद्विषण्यहलो
- ३ विध्वंसोद्धतवीरयोध)तिमिरः श्रीचन्द्रदेवो नृपः । येनोदारतरप्रतापश्रमिताशेष-  
प्रजोपद्रवं शोमद्राधिपुराधिराज्यमसमं दोर्विक्रमेणार्जितम् ॥ तीर्थानि कामि-  
कुशिकोत्तरकोश—)
- ४ लेन्द्रस्थानीयकानि परिपालयताभिगम्य । चेमात्तमुत्थमनिभं ददता द्विजेभ्यो येना-  
द्विता वसुमतो भूतभक्षुलाभिः ॥ तस्यात्तजो मदनपास इति चित्तीन्द्रचूडा(महि-  
र्विजय)ते नि—
- ५ (जगोचचन्द्रः । यस्याभिषेककलशोऽक्षधितैः पयोभिः प्रक्षालितकृत्स्निरजःपटलन्धरि-  
न्याः ॥ यस्याशीद्विजयप्रयागसमये तुङ्गाचलोऽसौचलस्याद्यन्तुभिपदन्तमान + भरध—
- ६ (सम्पत्तिसमृद्धे । चूडारत्नविभूषितालुमलितस्यानाद्यगु)ह्नासितः शेषः पेषवशादिव  
चक्षुमग्नौ क्रोडे निक्षीमाननः ॥ तस्यादजायत निजायतबाहुवक्षिबन्धवचनवराङ्गम-
- ७ (जो नरेन्द्रः । सान्द्रावृतद्रवमुचां प्रभवो नवां यो) गोविन्दचन्द्र इति चन्द्र इवाव्यु-  
रारोः । न कथमप्यलमना रणवर्मास्त्रिष्टुप दिव्यु गजानाथवक्षिणः । ककुभि वध-  
मुरधमुवहम—
- ८ (प्र)तिभटा (एव यस्या) घटा गजाः ॥  
सोयं स(मसाराजचक्रसंभे)वितचरकः परमभहारकमहाराजाधिराजपरमेश्वर-  
परममाहेश्वरनिजभुजोपाजितश्रीकन्यकुजाधिपत्य
- ९ (श्रीच)न्द्रदेवपादानुध्यातपरमभहारकमहाराजाधिराजपरमेश्वरपरममाहेश्वरश्रीमद-  
नपासुदेवपादानुध्यातपरमभहारकमहाराजाधिराजपरमेश्वर—
- १० परममाहेश्वरश्रीमद्गोविन्दचन्द्रदेवो विजयी ( ) निवासिभो  
निखिलजनपदानुमतानपि च राजराज्ञीशुवराजमन्त्रिपुरोचितप्र—

\* I take this word to be the ancient form of the Uriya *Māhanti* and the Bengali *Māyiti*, an officer whose duty is to keep accounts.



११ तीर्थांसेनापतिभाषागारि (काचपठ) लिखितमिहैमिनिकान्तःपुरिकदूतकरितुरनप-  
तनाकरस्थानमोकुलाधिकारिपुत्रवानाज्ञापयति (बोधयत्यादिश्च—

१२ ति च ।

यथा विदितमस्तु भवता यद्योपरि लिखितप्रामौ सजलस्थलौ सलोलवशा-  
कौ समस्त्याकौ समौषरौ समधूकाचवनवाटिकाविटपट्टस्थितौ—

१३ (चरपर्यन्तौ सौधौ) वस्तुतः पाठविशेषौ खसीमापर्यन्तौ चतुःसप्तत्यधिकैकादशमत-  
संवत्सरे फासुने मासि कृष्णपक्षे तृतीयायां तिथौ चक्रतोऽपि संवत् ११७४ फासु

१४ ..... तीरसमावासेन मन्त्रपूतोदकेन खाला विधिवत् मन्त्र-  
दे(व) मुनिमनुजभूतपितृगणक्षर्पयित्वा तिमिरपटलपाटनपट्टमहसमुष्णरोचिषमुप-  
स्थायौ (वधिपतिश्च—

१५ लम्बेच्छरं समग्रं) यै विभुवनवातुर्व्यासुदेवस्य पूजां विधाय पायसेन हविषा हविर्भुजं  
ऊला मातापितरात्मनश्च पुण्ययशोऽभिष्टये काश्चपगोत्राय काश्चपासारनैभु—

१६ वप्रवराय ठकुरश्रीयोगिपौत्राय ठकुरश्रीउदैपुत्राय ठकुरश्रीदेवपालशर्म्मे श्राद्धा-  
यास्माभिर्गोकर्णकुशक्षतापूतकरतलोदकपूर्वमाचन्द्रार्कं यावत् (प्रासनी—

१७ कृत्य) प्रदत्ताविति मत्वा यथादीयमानभागभोगकरप्रवसिकरप्रश्रुतिसर्वदायानाज्ञा-  
विधेयीभूय दास्यथा ॥

भवन्ति चात्र श्लोकाः ।

भूमिं यः प्रतिगृह्णाति यश्च भूमिं

१८ प्रयच्छति । उभौ तौ पुण्यकर्माकौ नियतौ स्वर्गगामिनौ ॥ १ ॥ शब्दं भद्रासनं हनं  
वराद्या वरवारणाः । भूमिदानस्य चिह्नानि फलमेतत् पुरन्दर ॥ २ ॥ सर्वानेतान्  
(भाविनः पा—

१९ र्थि) वेन्द्रान् भूयो भूयो याचते रामभद्रः । सामान्योऽयं स्वर्गमेतुर्त्तपाकाङ्क्षाले काले  
पालनीये भवद्भिः ॥ ३ ॥ वडभिर्यस्य भुक्ता राजभिः समरादिभिः । (यस्य यस्य  
यदाभू—

२० मिश्र) तस्य तदा फलम् ॥ ४ ॥ सुवर्णमेकं गमेकां भूमेरप्येकमङ्गलम् । हरद्वारक-  
नाम्नेति यावदाभूतसंभवम् ॥ ५ ॥ तडागानां सचक्षेकाप्यसमेधशतेन च । (गवां कोटि-

२१ ३) दानेन भूमिर्भूता न श्रूयति ॥ ६ ॥ खदनां परदनां वा यो चरेत् वसुधराम् । स-  
चिह्नायां कृमिर्भूला पिङ्गभिः सङ्ग मज्जति ॥ ७ ॥ वडिर्वर्षसङ्ख्याणि स्वर्गे वसति भूमिदः ।

२२ चाक्षेता चानुमन्ता च तान्येव नरके वसेत् ॥ ८ ॥ वारिहीनेश्वरक्षेपे शुष्ककोटर-  
वासिनः । कृष्णसर्पाश्च जायन्ते देव (गङ्गासञ्चारिणः ॥ ९ ॥ यानीह दत्तानि

२३ पुरा) नरेन्द्र दानानि चर्मा (यंयज) क्षराणि । निर्मास्यवान्प्रतिमानि तानि को नाम  
साधुः पुनराददीत ॥ १० ॥ वाताभविधमनिदं वसुधा (धिपत्यमापातमाचमधुरा

२४ विष) योपभोगाः । प्राज्ञा (सुधाप) जलविन्दुसमा नराहान्यर्थाः सत्त्वा परमघो परलोका-  
याने ॥ करचिकोद्धतं ठकुरश्री

*Translation.*

1. Let this be auspicious. May that agitation at the commencement of his dalliance with S'ri, when her hands rolled about on the neck and shoulders of eager and lustful Vaikuṇṭha, be to your prosperity!

2. When the line of protectors of the earth, born of the race of the ungenial-rayed orb (the sun), had departed to heaven, there lived one of the name of Yaśovigraha, the munificent, who, in the plenitude of his effulgence, was like the sun himself.

3. His son was Mahichandra, whose glory, resembling the light of the moon, was spread wide by him beyond the sea.

4. Unto him was born a son, the king S'ri Chandradeva, the lover of polity, the discomfiter of hosts of enemies, the dispeller of the gloom of impatient, heroic warriors, by whose glorious majesty was repressed the revolts of the subjects of the unrivalled great kingdom, of auspicious Gādhipura,\* which was earned by the valour of his arms.

5. Repairing, as a protector, to Kās'ī, Kuska, Uttara Kos'ala, Indrasthāna, and other places of pilgrimage, he marked the earth by the performance of a hundred tulā rites, in course of which he repeatedly gave to the twice-born his own weight in gold.†

6. His son was Madanapāla: that crest-jewel of the lords of the earth flourishes as the moon of his race. By the waters, which sparkled in jars at his coronation, the earth was washed clean of all the sinful dust of this iron age.

7. When he went forth to conquer, on the earth sinking under the over-powering weight of the foot-falls of his maddened and careering elephants, high as lofty mountains, the serpent Śeṣha, crushed as it were by it, and having its crest-jewel fractured and thrust down into its bleeding mouth, for a time hid its face in its folds.‡

8. From him descended the king Govindachandra, even as the moon issued forth from the ocean. His long arms, extending like creepers, tied and checked all elephant-like upstart kingdoms, and he was the source of thick fluid-nectar-sprinkling eloquence.§

9. His numerous elephants could nowhere in the three quarters find worthy taskers that could fight with them, and so they repaired to the quarter of the wielder

\* Ancient name of Kanauj

† The ceremony is a very costly one, but it is not uncommon. Within the last ten years it has been several times celebrated in Calcutta, and in course of it not only gold, but silver, rice, paddy, sesamum seed and other articles were weighed against the donor, and presented to Brāhmins. The Dānakhaṇḍa of Hemādri, now in course of publication in the Bibliotheca Indica, contains a full description of the details of this rite.

‡ It is commonly believed that certain species of serpents bear very bright jewels on their heads; Śeṣha, the king of serpents on whose head rests the earth, according to Paurāṇic cosmogony, has the largest jewel.

§ If the word *gavaya* be taken in its ordinary acceptance of kino, the meaning of the phrase would be "the source (whence men obtained) kino which gave thick, sweet milk."

of the thunderbolt (East) where the lord of Abhramu\* (Airāvata the elephant of Indra) was their only rival.

The same Govindachandra Deva, whose feet are profoundly adored by hosts of sovereigns, the highly revered,† the great king over great kings,‡ the supreme lord,§ the devout worshipper of Ś'iva,|| the sovereign of the three classes of kings, viz. As'vapati, Gajapati and Narapati,¶ master (Vāchaspati) of all knowledge and logic, successor of the highly revered the great king over great kings, the chief lord, the devout worshipper of Ś'iva, Ś'ri Madanapāla Deva. who was the successor of the highly revered, the great king over great kings, the supreme lord, the devout worshipper of Ś'iva, Ś'ri Chandra Deva, the sovereign who, by his arms, carved the happy kingdom of Kānyakubja, reigns supreme.

He commands, acquaints and enjoins the inhabitants of(?) and those who have come thereto from other places, as also kings, queens, heirs-apparent, ministers, priests, warriors, (pratihāra) generals, treasurers (bhāulāyārikas) justiciaries (akṣhapāṭikās) physicians, astrologers, guardians of female apartments (or dwellers of the zenāna,) envoys, and owners of elephants, horses, towns, mines, commons, and herds of cattle: Be this known unto you, that after bathing in water consecrated by mantras, after offering according to law water to mantras, gods, sages, mortals, elements and manes, after paying due adoration to the fiery light (sun) whose rays are potent in dispelling dense darkness, after worshipping the crescent-crested (Ś'iva), after performing puja to Vāsudeva, the preserver of the three regions, after offering oblations of frumenty and clarified butter to the partaker of butter (fire), for the promotion of virtue and fame of myself and of my mother and father, I have, by this patent, with water held in my hand and consecrated with Kusa grass, for the period of the duration of the sun and moon, bestowed on the third of the wane, in the month of Phālguna, in the year of Samvat one thousand one hundred and seventy-four, (in figures) Samvat 1174 Phalg., the two above written villages, together with their soil and waters, their iron and salt mines, their fisheries, pits and salt fields, their orchards of mango and madhuka trees, their gardens, topes, grass fields and pasturages, including everything above and below,

\* Name of the mate of Airāvata.

† Paramabhojjāraka. In Sanskrit dramas bhāṭṭika means a king, but in ordinary language a revered personage is generally implied.

‡ Mahādājādhirāja equivalent to the Arabic *sultān us-salāṭīn*. The term may be split into two—Mahādāja and adhirāja "great king, and paramount sovereign."

§ Parama- supreme and īśvara=lord or god. The epithet has been loosely rendered into Emperor in the translation of the Delhi College plate (xxvii p. 249).

|| Parama-Māhā-īśvara. In the Benares inscription of Col. Stacy, it is placed in opposition to parama vaiṣṇava, some of the princes named being parama māheśvara, others parama vaiṣṇava. The long ā after m shows that the word is a derivative and refers to Maheshvara or Ś'iva. A sectorial meaning may be objected to on the ground of the seal having the Vaisnava emblems of Garuda and conch-shell, indicating that Govinda was a Vaiṣṇava. But the expression of equal respect for both Ś'iva and Viṣṇu is not uncommon.

¶ Evidently intended for some tributary kings. The Rājās of Oriasa used to call themselves Gajapatis; those of Talingānā and Karnāṭa bore the special title of Narapati, and some of the Burmese monarchs were As'vapatis; but it is not at all likely that any of those bore allegiance to the kings of Kanauj. Vide ante xxvii, p. 24.

with their four abutments well defined, and within their boundaries, on the Brāhman Thakkura, Devapāla Śarmā, son of Thakkura Udai; and grandson of Thakkura Yogi, of the Kās'ynpa clan (*gotra*) and Kāsyaśāsāra-naidhu sept (*pravara*). Knowing this you should comply with his orders, and render unto him all dues, shares, rents, tributes, quadrivial tolls, &c., whatever have to be given.

On this subject are the following ślokaś :

1. (The same as the 4th śloka of the first grant.)
2. A conch shell, a throne, an umbrella, choice horses, and excellent elephants, Purandara, are the royal insignia, which constitute the reward of giving away land.
3. Rāmachandra repeatedly intreats all present and future lords of earth (to bear in mind) that this bridge of virtue (the granting of lands) is common to all sovereigns, and should be preserved by you at all times.
4. (Is the same as the 2nd of the first grant.)
5. He who robs a gold piece (*suvarṇa*), a cow, or a finger's breadth of land, dwells in hell until the dissolution of the universe.
6. (The same as the 5th of the first grant.)
7. The same as the 3rd of the first grant.
8. The donor of land dwells in heaven for the space of sixty thousand years; the resumer, and the abettor thereof, are doomed to abide in hell for a like period.
9. The resumers of lands dedicated to Gods and Brāhmans, become dwellers in arid wastes devoid of water, and dry hollows in trees, and are born as black serpents.
10. All the gifts of former kings are productive of virtue, wealth, and fame,—how an he, who claims the name of goodness, resume them which are to them but as emblems of vomited food?
11. Sovereignty is like unto clouds impelled by wind, (*i. e.* inconstant), worldly pleasures are sweet only for the moment, the life of man is but a drop of water at the point of a blade of grass; virtue verily is the only great friend for translation to a future world.

By the Kayaśtha Thakkura Śrī—

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*A Metrical Version of the opening Stanzas of the Prithirdj Rdau, with a critical commentary.*—By F. S. Growse, M. A., B. C. S.

"Manuscripts are in general grossly incorrect ; and a familiarity with the metre will frequently assist the reader in restoring the text where it has been corrupted."

*Colebrook, on Sanskrit and Prakrit Poetry.*

The following version of the opening Stanzas of Chand's great poem does not lay claim to any poetical merit. It simply professes to be a close and accurate reproduction of the original, so far as the difficulties of the text allow, in readable and intelligible English. Occasionally the exigencies of rhyme and metre have necessitated some slight expansion or curtailment ; and in a few passages the *exact* turn of expression has been deliberately abandoned, either because there was a doubt about the reading, and therefore a little vagueness was preferable to what might turn out to be mistaken accuracy, or because a rigid adherence to Hindi style would have had a forced and unnatural effect, and to that extent have misrepresented the original. But throughout, the translation is line for line, not unfrequently word for word ; the connection of ideas, not always easy to trace, has been carefully studied and faithfully preserved ; and not a word *materially* affecting the sense has anywhere been either omitted or inserted.

These, it must be admitted, are rather the merits which should characterize a prose translation ; and as a literal rendering of these very same stanzas has already appeared in the last volume of the Society's Journal, the present version might be hastily condemned as a mere work of super-erogation. The rendering to which I refer is therefore appended in a running foot-note ; the words to which exception is taken as being (in my opinion) specially incorrect being printed in italics ; and the text is inserted above, in order that the correspondence, or otherwise, of the one with the other may be rapidly apprehended. For other reasons it was desirable that such comparison should be made ; though it may be added that the present metrical version would never have been attempted but for the opening sentence of the preface to the prose translation, which fathers upon me a retraction which I am not conscious of having made.

In my reprint of the text I have for the sake of the metre corrected the copyist's errors of spelling in many places where without such correction the lines could not possibly be scanned. It is incredible that Chand himself was guilty of these false quantities, since in one of the verses which I translate, it will be seen that he specially prides himself upon his accurate knowledge and observance of the laws of prosody. The alterations, which affect the sense, are very few in number, and are all fully explained and defended in my running commentary.

## I. प्रथम साठक चंद ।

आदि प्रमथ नम्य मुख्य वामीय वंदे पयं ।

सिद्धं चारन चारयं वसुमती लक्ष्मी चरमाचयं ॥

तमगुन तिष्ठति ईश दुष्ट दहनं सुरमाय सिद्धिचयं ।

धिर चर जंगम जीव चंद नमयं सर्वेश वरदानयं ॥ १ ॥

- I. Bowing low before my master, I the queen of speech entreat,  
And the world-supporting serpent and great Vishnu's holy feet.  
Then the perfect, sin-consuming god of gods that awful power,  
Life of man and life of nature, I the poet Chand adore.

Thus after due mention of his Guru, the poet addresses his invocation to Sarasvati, Sesh-nag, Vishnu, and Mahādeva, the first of these four divinities being clearly indicated by her title of Vāni. Half of the second line is difficult, but if translated literally, would I believe stand thus, "The supporter of the weight of creation, that is, of the world," meaning Sesh-nāg. It can scarcely be doubted that *sishtam* is a corruption of *srishtam*, 'created,' not of *sreshtham*, 'the best' or 'highest;' for the substitution of *i* for *ri* is quite according to rule, as in *siāla*, 'a jackal' for *srigāla*, but I know no instance of the substitution of *i* for *re* or *t* for *th*. In the third line, the words *tama-guna* indicate Mahadeva, who is lord not 'of vice and of virtue,' but of the quality (*gun*) of darkness (*tama*). In *siddhi-srayam* the first part of the compound may mean 'success,' or may allude to the eight Siddhis, Rasollāsa, Tripti, Sāmya, Tulyatā, Visokā, &c., the constituents of perfection; and adopting the latter view I translate by 'perfect.' In the fourth line, I have corrected the unmeaning word *Chandana-mayam* by the simple process of division into *Chanda namayam*, 'I Chand reverence.' In the first half of the line, *acharu* should probably be read for *charu*; for certainly the intention is to represent the god as the life both of sentient and insentient creation.

## II. वयूचा चंद ।

प्रथम सुमंगल मूल मुनि वीथ ॥

क्षुतिमय अन्न सिंचय द ॥

## I. The prose translation :

"First reverently bowing, howing, the poet adores the feet of the *Gurus*. Taking refuge at the feet of the *highest*, the afforder of support, the husband of the opulent Lachhi, who stands the lord of vice and of virtue, consuming the wicked, the lord of heaven, blessing with success; who is as sandal-wood to the life of living beings moving on the earth, lord of all, bestower of blessings."

## II. The prose translation :

"First the very auspicious root is to be celebrated. Irrigated with the water of the truth of tradition, religion like a fair tree with one trunk sprang up, with thrice six branches rejoicing the three worlds. Leaves of various colours, leaves like mouths there were. Colour of flowers and weight of fruit it had, speech unfulfilling, princely, rejoicing with fragrance the sight and touch, *āsan* tree of hope to the parrot-like poet."

सुतस्य एकं चरं भक्तं उभयो  
 निषट् साय रक्षितं निपर ॥  
 वरनं पत्तं सप्त पत्तं सुभ्यो ॥  
 कुसुमं रंगं भारुचं सुफलं ॥  
 उकतिं अलं व अमीर ॥  
 रसं दरसनं पारसं रमितं ॥  
 आसं असनं कवि कीर ॥ १ ॥

- II. From the seed of Revelation,  
 Watered by Law divine,  
 Sprang with thrice six spreading branches  
 Faith, a straight and goodly pine,  
 Each leaf a lettered sign.  
 Rich in fruit of lovely colour  
 And honied flowers of song,  
 Sweet to taste, to see and handle,  
 For the poets, parrot throng.

In the first line I have divided the unknown word *Sruta viya* into *Sruti viya*; *Sruti* being the highest Revelation as distinct from *Smriti*, mentioned in the next line, divine Law or Tradition. *Viya*, if allowed to stand, is of course 'seed'; but it might be better to read *boya*, 'to be sown'; the difference between the two words in Nāgari writing being almost imperceptible. The fifth line is probably corrupt; but *baran* certainly means not 'colour,' but 'letters of the alphabet;' which, according to the *Mīmāṃsa* Philosophy are supposed to be eternal and immutable. In line 7 *amir* is not the familiar Persian word meaning 'a noble,' but is for *amrit*, 'nectar.' In the last line the word *ās* is a little doubtful, but *āsan* unquestionably means simply 'eating.'

### III. इत्ये।

प्रथमं कीयं संगलं प्रमानं । निगमं संपूजय वेदं धरं ॥  
 निगुणं सायं चिह्नं चक्षुः । वरनं लम्बां सुपत्तं हरं ॥  
 लक्ष्मीं धर्मं उदरियं । सप्तं फूलैः कुं च व दिशि ॥  
 कर्मं सुफलं उदयनं । असनं सुभूतं मध्यं वसि ॥

### III. The prose translation :

"First having indeed proclaimed a blessing, having honoured the sacred writings, whose beginning is the Veda, whose three-fold branches in all four directions are possessed of colour and leaves like letters. Religion, having sprouted out through the bark, flowered fair in all four directions: its fruit, virtuous deeds springing out immortal, dwelling amidst mortals; firm as counsel of kings, or as the earth; the wind shakes it not, giving to life the flavour of nectar, the kali-yug affixes no stain to it, containing truth, wisdom, and perpetual freshness."

हुजे न वाय नप नीति इति । खाद् वसत जीवन करिष ॥  
कलि आय न सगे कलक रवि । सत सत खाडति धरिष ॥ ९ ॥

- III. The Vedic Scriptures, God's best gift,  
First claim respect profound,  
With three-fold branches spreading wide,  
Each leaf a lettered sound ;  
Its bark religion, whence the bud  
Of virtue forced its birth,  
Ripening to fruit of noble deeds,  
Heaven's bliss midst men on earth.  
Who tastes, unshaken by the blast,  
Firm as king's counsel, stays,  
Aye growing to more perfect good,  
Unsoiled by these foul days.

I have headed these stanzas 'Chhappai,' that being a more correct designation of them than 'Kabitt.' In the first line the word *pramān* is precisely identical in meaning with *nigam* in the following line ; both are synonymes of the Veda. A strictly literal translation would be "first having taken the blessed scriptures, reverence them, the divine oracles, the original Veda." It will be noticed that the poet keeps hovering round the same idea, which he repeats in three different metres. Line four here corresponds precisely with line five of the Vathúa, and as there *baran* must be translated 'A letter of the alphabet.' In the last line occurs the word *áphati*, which I translate 'growing,' taking it to be formed from the root *ridh*. A Mathurá Pandit explained it by *sambandh*, 'connection ;' in which sense chiefly as a business term, for dealings with an *arthiya*, or 'broker,' the word is still very common.

#### IV. छप्यै ।

भुजति भूमि किय क्यार । वेद भिन्धिय जल पूरन ॥  
बीज सुवय लय मध्य । ज्ञान अकूर सजूरन ॥  
विमल साव संपदिय । नाम बड पन रत जिति ॥  
सुकरम सुमन पुज्यौ । भुजति पक्षा द्वय संगति ॥  
दुज सुमन उषियवृष पक्ष रस । बट विलास गुन पक्षरिय ॥  
तब रक्ष साव नय लोक मधि । अजय विजय गुन विशरिय ॥ १० ॥

#### IV. The prose translation :

"Taking possession of the earth like a garden-plot ; irrigating it with the fulness of the Veda as with water ; placing in it good seed, upsprung the shoot of knowledge, combining branches of three qualities, with leaves of many names, red as earth. It flowered with good deeds and good thoughts, complete deliverance, union of substances. The twice-born of pure mind have experienced its flavour of perfect wisdom, a banian tree of delight, spreading abroad virtues ; the branches of this excellent tree in the three worlds, unconquered, victorious, diffusing virtues."



- IV. The world, a pleasant garden-plot,  
 Watered with Vedic lore,  
 From good seed cast into its midst  
 The plant of wisdom bore.  
 Three great boughs spread, and the earth grew glad  
 At the leaves' new melody,  
 While flowers of virtue swelled to fruit  
 Of immortality.  
 The bird-like sago quaffed the sweet juice  
 Of this exquisite marvellous tree,  
 With its single stem and its far-spreading boughs  
 Full of glory and victory.

In the first quatrain, the only word of any difficulty is *bhugati*, which I take to be equivalent to *bhog*. In the second occurs the phrase *ratt chhiti*. Here *ratt* is simply the past participle of the verb *rang*, meaning not 'red,' nor even 'coloured,' but in its secondary sense 'affected by love,' like the more common *mohit*, 'charmed.' The two words are parenthetical, and the most literal translation of them possible is 'earth is charmed.' The three boughs, to which such frequent reference is made, can scarcely be taken to mean the three qualities *sattva*, *rajas*, and *tamas*, but indicate rather that the influence of religion extends over the three worlds of earth, heaven, and hell. In line seven, I have altered *susan*, apparently a mere misprint, to *suman*, not 'good thoughts,' but 'a flower.' In the ninth line, *duja* might mean 'twice-born;' but it seems a more appropriate carrying out of the allegory to take it in its other well-known sense of 'a bird.'

बंद भुजंगप्रयात ।

- प्रथमं भुजंगी सुधारी पद्मम् ।  
 जिने नाम एकं जनेकं कथम् ॥  
 दुती सत्त्वमं देवतं जीवतेसं ।  
 जिने विश्वं राखी बली मंच सेसं ॥  
 5. चवं वेद वंभं चरी किनि मारी ।  
 जिने भ्रम साभ्रम संसार सावी ॥  
 हती भारती बास भारद्व्य भावौ ।  
 जिने उत पारद्व्य सारद्व्य सावौ ॥  
 चवं सुखदेवं परोपत पावं ।  
 10. जिने उद्वेषो सर्वं कृप वंस रावं ॥  
 नरं रूप पंचम कीचवं चारं ।  
 बलीराव कंडं दिने ग्रह चारं ॥  
 बंडं काशिदावं सुभाषा सुभवं ।  
 जिने बाज बानी सुबानी सुवदं ॥

15. कियौ कालिका मुख बानं सुसुखं ।  
जिनै सेतु बंधौ तिभोजप्रबंधं ॥  
सतं दंडमालो उलालो कविषं ।  
जिनै बुद्धि तारंग गंगा सरितं ॥  
जयदेव चट्ठं कबो कव्वि रायं ।  
20. जिनै केवलं किति गोविन्द गायं ॥  
गुबं सख कव्वो लल्ल चंद कव्वो ।  
जिनै दर्शयं दंवि सा खंग हव्वो ॥  
कबो किति कितो उक्ती सुदिखी ।  
24. तिनं की उचिछी कबो चंद भव्वो ॥

- V. First reverence to the serpent-king, who ordereth all things well,  
Whose name is told ways manifold, though one, unchangeable.  
Next be adored the Sovereign Lord, the god of quick and dead,  
Who by strong spells set fast the world on the great serpent's  
head.
5. I. the four Vedas' holy texts is Hari's glory shewn,  
A witness to eternal truth, where only sin was known.  
Be Vyāsa third, from whom was heard the tale of the Great War,  
Where Krishna, first of charioteers, drove Arjun's sounding car.  
Fourth, Sukadev, who at the feet of king Parikshit stood,  
10. And wrought salvation for the whole of Kuru's lordly brood.  
Sri Harsha, fifth, pre-eminent in arts of poesy,  
Who on king Nala's neck let fall the wreath of victory.  
Sixth Kālidās, in eloquence beyond all rivals great,  
Whose voice the heavenly Queen of Speech vouchsafed to  
modulate.
15. Upon whose lips great Kālī's self thought it no shame to dwell,  
The while he framed in deathless verse King Bhoja's Chronicle.

V. The prose translation :

First be the well-adorned Bhujañgi taken, whose name this one is spoken in many ways. Second be taken the god, the lord of life, who placed the universe by powerful spells on Sesh-nāg. In the four Vedas by the Brahmins the glory of Hari is spoken, of whose virtue this unvirtuous world is witness. Third the Bhārati Vyāsa spake the Bhārath, who bore witness to the more than human charioteer. Fourth Sukadeva at the feet of Parikhit, who extolled all the kings of the race of Kuru. Fifth . . . . . who placed a six fold necklace on the neck of king Nala. Sixth Kālidāsa, fair of speech, fair of wit, whose speech is that of a poet, a master-poet, fair-speaking, was made the pure fragrance of the mouth of Kali, who firmly bound the dyke of three-fold enjoyment. Seventh, Danda-Māli's charming poem, the wave of whose wit is as the stream of Gungā. Jayadeva, eighth, poet, king of poets, who only made the song of Govinda. Take all these poets as thy spiritual guide, poet Chand, whose body is as a sacrifice inspired by Devi. The poets who have uttered praises and excellent speech, of them poet Chand has spoken highly."

- Be seventh in place the jocund grace of Danda-Māli's theme,  
Sweeping along, full, deep and strong, like Ganga's mighty stream.  
Eighth Jayadeva, bard of bards, most worthy that high name,
20. Whose sole delight to tell aright the great god Gobind's fame.  
Thus each great name of elder fame I the bard Chand invoke;  
For as the present god inspired, those loving servants spoke.  
In humble phrase I dare to praise the deeds of one and all,
24. Who can but gather up the crumbs that from their table fall.

If this passage is genuine, and there seems no reason to doubt the fact, it is of some value in the history of Sanskrit literature as tending to determine the date of the two poets Sri Harsha and Jayadeva. Dr. Bühler assigns the former to the middle of the twelfth century, relying chiefly on the authority of Rājā Sekhara, a Jain writer of about the year 1350 A. D. This view, which is by no means in accordance with ordinary Hindu tradition, has been ably combated in the pages of the *Indian Antiquary*, and must now be considered as finally refuted. For though Chand may not have been a very profound critic of Sanskrit style, and may have been as regardless of chronological precision as most of his countrymen, still it is impossible that he should have committed the blunder of referring to remote antiquity a writer, who—according to Dr. Bühler's hypothesis—would have been all but, if not quite, his contemporary. Similarly in Jayadeva's case, the desire of European scholars to prune down the exaggerated figures, in which Hindus are prone to indulge, has led to error in the opposite direction. Professor Wilson concludes him to have been a disciple of the great religious reformer Rāmānand, who flourished in the thirteenth or fourteenth century. This connection, so far as I can ascertain, is not warranted by any text in the *Bhakta Mālā*, the recognized authority for the lives of the Vaishnava saints, and is totally disproved by the fact now brought to light that Jayadeva is mentioned by name by Chand, who wrote some hundred years before the time of Rāmānand even.\*

The metre *Bhujanga prayāt* is a series of rhyming couplets, each line comprising four of the foot called in Sanskrit prosody *Ya-gan*, i. e. one short followed by two long syllables. In the twenty-four lines, as originally printed, there are as many as eighteen false quantities; but the defect in every instance is obviously the result of mere carelessness on the part of the transcriber, and has been rectified by some one of the three simple and recognized prosodical expedients, *viz.*, the introduction of an anusvāra, the reduplication of a consonant, or the change of the quantity of a vowel. In the first line, the word *Bhujangi* contains an allusion to the name of the

\* I have stated the argument at greater length in two letters on the subject which have appeared in the *Indian Antiquary*.

metre, which it is quite impossible to preserve in a translation, but primarily it denotes the serpent God, Sesh-nág; *bhujanga* being a common name for a serpent. *Sudhári*, like every other word with the same termination, has not a passive but an active signification, and means 'the good arranger;' as *mantra-dhári* means 'a layer down of counsel,' and *rās-dhári* 'a composer of dances.' It will be observed that the poet is giving a brief catalogue of all the great authors of earlier date, and places at their head the god Sesh-nág, the first artificer or *πρωτης* of the universe. He then passes on to the Vedas, which he represents as directly inspired by Vishnu, and thence to the Mahá-bhārat of Vyása, the Śrī-Bhāgavat of Suka-deva, and so on, in each case either mentioning by name or describing the author's principal work and eulogizing his genius. Thus in the fifth line we are forbidden by the context from taking the obscure word *bambham* to represent the 'Brahmans' as the authors of the Veda, which has already been distinctly ascribed to Vishnu himself. I would rather consider it as a corruption of *babhru*, a title of that god, and couple it with the word Hari which immediately follows it.

In line eight, *utta* would seem to be an abbreviation for *uttam*, 'the best;' while Pārathth is simply the Hindi form of the Sanskrit Pārtha, meaning 'the son of Prithá,' a very familiar name of Arjun, the great hero of the Mahá-bhārat. In lines nine and ten, the reference is to the Śrī Bhāgavat, which was recited by Sukadeva to king Parikshit when at the point of death, as the best means for procuring the 'salvation' (*uddhāra*) of his soul.

In the following couplet, I have corrected the unmeaning word *shaddha* to *suddha*. The allusion is to Śrī Harsha's famous poem, the Naishadha, which narrates in twenty books the adventures of the hero Nala, king of Nishadha, and concludes with the description of the Svayam-vara, where Damayanti in token that she had selected him for her husband 'dropped upon his neck the wreath of flowers.'

Lines thirteen to sixteen are eulogistic of the great poet Kālidāsa, to whom Chand ascribes, not with perfect accuracy, the composition of the Bhoja-prabandha, a work in mixed verse and prose.\* A literal translation of line fourteen would be "whose voice Sarasvati made a charming voice," *vāg* being not 'speech' but the 'queen of speech;' and *vāni* not 'a poet' but 'voice.' In line fifteen, *vāsam* is not 'fragrance,' but 'an abode;' and in line sixteen the words *setu bandhyau* mean simply 'composed,' having been selected with alliterative allusion to the *prabandha* which forms part of the title of the work under mention. It may be noted upon lines seventeen and eighteen, that Danda-māli's great work, the Dasa-Ku-

\* The prose frame-work is known to have been composed by Ballāla Misra, but many of the poetical extracts may with great probability be ascribed to Kālidāsa.

marā-Charita, has still less claim than the Bhoja-prabandha to be considered a poem; since unlike most Sanskrit literature it is entirely in prose. The style, however, is sufficiently elaborate to make it ordinarily included among the Kāvya.

In line twenty, an alteration required by the metre is equally essential for the sense: *kitti*, with the last syllable long, being when so spelt the past participle of the word *karná*, 'to make,' must be corrected to *kitti*, with the last syllable short, a corruption of *kirti*, 'fame.' *Gāyam* also should be translated as the verb 'sung,' rather than as equivalent to *gīta*, 'a song.'

In the twenty-second line, *habbi* cannot possibly be taken as a derivative from the root *hu*, 'to sacrifice;' it is far more natural to connect it with *hāva*, 'love and dalliance.' In the last line, I take *uchishti* as a substitute for *uchchhishta*, corresponding to the Hindi *jhuthā*, 'the fragments of a feast.'

## VI. दोहा ।

उचिह चंद चंदच वयन । सुनत सु जणिय नारि ।  
तन पविष पावन कविय । उकति अनूठ उधारि ॥ ६ ॥

VI. Hearing Chand rate his art so low,  
His lovely consort cries :  
O pure and all unblemished bard,  
Skilled in rare harmonies.

Here *uchisht* must of course be taken, as at the end of the last stanza, to denote something utterly low and vile. In the third line *tan pavitra* is rather 'pure of body' than 'purifier of the body,' and *pāvan*, with precisely the same meaning, is added simply for the sake of emphasis.

## VII. छन्दै ।

कहे कति मन कंत । तन पावन वड कविय ।  
तंत मंत उधार । देवि दरसिय मभि वजिय ॥  
तंत वीर उपंत । रंग राजन सुष दार्य ।  
बाह कंस प्रत्यंग । सुरनि उधारि कवितार्य ॥

### VI. The prose translation :

"The speech in verse of Chand, excellent, hearing him utter, his wife says, Purifier of the body, O poet, uttering excellent speech."

### VII. The prose translation :

"Saith the wife to her husband: Purifier of offspring, great poet, uttering spells and charms, like an oblation offered to Devi, hero of spells, very terrible, giving pleasure to kings by thy poetry: the childish sports one by one of the gods having extolled in thy poems, having uttered unchecked speech, from which to me comes wisdom, that word, which is the visible form of Brahm, why should not the best of poets speak it?"

अबलें उकति उधार करि । जिहित मोहि कोविद रहे ॥  
समग्ररूप या सबद कहुं । को उचिह कविजन कहे ॥ ३ ॥

- VII. Nay, good my Lord, thus quoth his spouse,  
Great bard, unblemished elf,  
Whose prayers and spells have power to win  
The love of Heaven itself,  
Hierophant of mystic lore,  
Charm of the courtly throng,  
Like to a child in untaught play  
Lisping divinest song ;  
In faith pronounce one holy name  
(For faith and love make wise),  
'Tis Brahma's self ; no dregs of eld  
Deem then thy melodies.

There can be no question as to the meaning which the first line is intended to convey, but it seems impossible grammatically to extract that meaning from it, if the word *sama* be retained. I have altered it to *mamā*. In the second line also, I have made a change by substituting *tan* for *tant* ; it now corresponds precisely with the third line of the preceding *doha* ; and a repetition of the kind, after a change of metre, is a very favorite artifice with Hindi poets. The erroneous reading of *tant* is due to its occurring at the commencement of the very next line, where it caught the copyist's eye. In the third quatrain, I have introduced two emendations ; first by combining *ko* and *vid* into one word *kovid*, 'wise' ; and secondly, by joining *kabiya* with the following negative, and so converting it into the plural form *kabiyān*. The words *habbiya* and *uchisht* have already been commented upon.

#### VIII. ज्ये । चंद वाक्य ।

सम वनिता वर वंदि । चंद जंपिय कोमल कल ।  
सबद ब्रह्म रह सति । अपर पावन कहि असल ॥  
जिहतत सबद नहि रूप । रंज आकार ब्रह्म नहि ।  
अकल अगाध अपार । पार पाव न बचपूर नहि ॥  
निहि सबद ब्रह्म रचना कै । मुख प्रसाद सरन प्रसन्न ।  
जयपि सु उकति चुकौ जगति । तो कमलवदनि कवितह हसन ॥ ४ ॥

#### VIII. The prose translation :

"To his wife saith the bard Chand, muttering soft and low, that true word of Brahm, purifier of all others, itself pure, that word which has no form, stroke, letter, or colour, unshaken, unfathomable, boundless, purifier of all things in the three worlds, that word of Brahma let me expound, the glory of the Gurus, pleasing to Sarasvati, if in the arrangement of my phrases I should succeed, it will be pleasing to thee, O lotus-faced one."

With reverence to his dearest spouse  
 Quoth Chand in accents mild :  
 That holy name of God most high,  
 Pure, infinite, undefiled,  
 Beyond the compass of all shape,  
 Form, stroke, or lettered sign,  
 Fathomless, indivisible,  
 That no sphere can confine,  
 Hymned I that name, by my lord's help  
 And Sarasvati's grace,  
 Jeers still would mock my faltering style,  
 O Queen of the lotus face.

In the first line, I have allowed the word *sam* to stand, thinking it possible that it might be intended to represent the Sanskrit *swa*. The combination *barbandi* would seem to be a misprint; though it is impossible to say, as it is omitted altogether from the prose translation; obviously it consists of two distinct words *bar* 'excellent' and *bandi*, 'reverencing.' In line seven, *akal* is not 'unshaken,' but 'without parts,' that is 'indivisible.' The next line literally translated would be 'that can find no limit in the three worlds'; पावन being divided into पाव न. In the eighth line, *prasād* is not in opposition to *rachná*, but the words are parenthetical, and the construction expressed in full would be *Guruke prasād se, aur yadi Sarasvati prasann ho*. In the eleventh line, for *chukaun* with *u* short, meaning 'to complete,' I think it would be better to read the same word with *ú* long, meaning 'to fail.'

IX. जय । चंद की वाक्य ।

तुम वाणी वर चंद । नाम देखंत विमल मति ॥  
 चंद भंग न रचित । कंठ कीमत् काव्य छत ॥  
 बुधितरंग सम गंग । उकति उच्चार अमिय कल ॥  
 सुनर सुमत विद्वंसत । संत जगु बख्य करन बल ॥  
 अवतार भय प्रथिराज पड । राज दुष तिन समल्लखहि ॥  
 बीराधिबीर सामंत सब । तिन दु गण्ड खखी कहहि ॥ ८ ॥

IX. O reverent and most pure-souled bard,  
 Versed in all rhythmic law,

IX. The prose translation :

"Thou art the poet, the excellent bard, gazing on the heavens with unclouded intellect, skilful in the arrangement of metres, having made the song of the peacock-youth. The wave of thy wit is like Gangá, uttering speech immortal, soft, good men hearing it are rejoiced, it subdues like a spell of might. The incarnation king Prithirāj the lord, who maintained the happiness of his kingdom, hero, chief of heroes, and all his paladins, of them speak a good word."

Who lisped in numbers as a babe,  
 Numbers that knew no flaw,  
 Like Ganga's stream, on pours thy song  
 In rich mellifluous flood,  
 A spell of might that all confess,  
 But most the wise and good;  
 The incarnate god, who rules the world,  
 King Prithirāj the Great,  
 Of lordly chieftains lordlier lord,  
 Be it thine to celebrate.

The word *nág* which occurs in the second line, is one that bears many meanings, but the context shews that in this passage it must be interpreted in its technical sense of 'the art of prosody.' A literal rendering of the next two lines would be 'whose verses are without any faults who in childhood made poems.' I fail to discover any possible allusion to the Kumārasambhava. In the sixth line *amiya kal* are 'sweet strains,' without any reference to 'immortality.'

X. कथे । चंद बाक् ।

मज्जनवनी प्रति चंद । चंद कोमल उच्चारिय ॥  
 मनहरनी रसवेली । सुरन सागर रस चारिय ॥  
 बंक नयन बयबाल । प्राणवत्सल सुखदार्दय ॥  
 मरु चमन निगन चरनि । मवरिपजा फल पारय ॥  
 भर चादि चंत कविता जिनै । तिन चमन गति मति कहिय ॥  
 चनेक पंथ तिन वरन वन । यौ उचित मतिमें लखिय ॥ १० ॥

X. Unto his fair and stately dame

Quoth Chand in loving wise :  
 Dear charmer, clinging vine of love,  
 Foretaste of Paradise,  
 With girlish eyes of witching glance,  
 My queen, my soul's delight,  
 Noting all faults but knowing none,  
 Heaven's rich-dowered favourite ;  
 List while I tell in faltering tones  
 How infinite a throng,

X. The prose translation :

"To her of the elephant gait, Chand singing a pleasant rhyme said, Ravisher of the soul, tendril of enjoyment, possessing the fragrance of the ocean of the gods, thou of the glancing eye, in the flower of thy youth, beloved of my soul, giver of bliss, wife, free from all evil qualities, thou who hast obtained the fruit of the worship of Gauri ; as many poems as there have been from first to last, consider how endless a string there is of them, the description of this matter is in many books, thus having taken in the best counsel,"



Of diverse talents, diverse theme,  
Are the great lords of song.

In this passage the only line of any difficulty is the seventh, which I translate 'faultless, observant of faults;' omitting the first word *garu*, which may either represent *garv*, 'pride,' or be a mis-reading for *guru*. A literal rendering of the last quatrain would be 'from first to last what poems there have been, their endless (varieties of) style and theme I tell. Countless are the books: now gather from my poor wit this attempt to describe them.'

# XI. बंद पदरी ।

प्रमथ्य प्रथम मन आदि देव ।  
ॐकार मवद जिन करि अखेव ॥  
निरकार मथ साकार कोन ।  
मनसा बिलास मथ फल फलीन ॥  
चयमुनस तेज चयपुर निवास ।  
सुर सुरज भूमि नर नाम भास ॥  
फनि ब्रह्मरूप ब्रह्मा उचारि ।  
कथि चतुर वेद प्रभु तत्त सार ।  
वरमयो आदि करता अखेव ।  
मुन रचित मुननि मथ रूप रेव ॥

- XI. First I adore the one primeval Lord,  
Who breathed the unutterable, eternal word;  
Who out of formless chaos formed the earth,  
And all creation, as he willed, had birth.  
Through the three spheres his three-fold glory sped.  
Fiends, gods and men—earth, heaven and hell o'erspread.  
Then the supreme, in Brahma's form revealed,  
By the four Vedas heaven's closed gate unsealed.  
How sing the great creator, uncreate,  
Passionless, formless, aye unchanged in state:

And so on for the remainder of a long paragraph; which, as it contains nothing of special difficulty, has already been adequately translated, and therefore need not be repeated. It does not advance very far in the promised poetical catalogue, for after extolling the divine author of the

## XI. The prose translation :

"First reverencing my first of gods, who uttered the imperishable word Om, who made the formed out of the formless, the will of his mind blossomed and bore fruit, the sheen of the three qualities, inhabiting the three worlds, *shining on* gods in heaven, men on earth, serpents in hell. Then in the poem of Brahma leaving the *Brahma-egg*, the lord, the essence of truth, said the four Vedas, the creator uttered them *unwritten*, without qualities, having neither form nor line.

Vedas, it just mentions by name the Purānas, the Rāmāyana and the five Mahā-kāvya; when the poet is stopped by his wife, who desires to have the Purānas enumerated more in detail. In the seventh line, I prefer the alternative reading *Brāhmā uchāri* to *Brahmānda chāri*, which the editor has adopted; and I translate 'then spake Brahma, the visible form of Brahm,' which appears to me a very simple and intelligible form of expression.

Before concluding this article, it may be interesting to adduce a specimen of a genuine native commentary on Chand : accordingly, I append a paraphrase of the first four lines of invocation, written by Pandit Mākhan Misr, a Śārasvat Brāhman, resident in Mathurā, who has the largest library of Sanskrit MSS., and is one of the best-read scholars in that city of Sanskritists.

भाटक ।

आदि कहिये प्रथम नम्य कहिय नमस्कार करने छारक जो मुरयं मुर तिनें प्रथम्य नमस्कार करके पय कहिये जल सरोकी निर्मल अथवा दूध सरोकी सेत जैसे जो वानीय नाम सरस्वती ताय नमस्कार कह्यं कैसे मुर हैं शिष्ट कहिये परंपरामरयादानके राखनवारे हैं फिर कैसे हैं धारन कहिये ध्यानादिक जो अष्टांगयोग हैं ताके धारयं कहिये धार्य करवे वारे हैं अब पशुपती कहिये महादेवजो अब लक्ष्मी कहिये लक्ष्मी खात्री जो विष्णु इन दोनोंनके ओ सरय हैं तेहें आनय जिनहुं जैसे मुरनहुं फिर कैसे मुर हैं तमगुन जो तमोगुन से सो न तिष्ठति कहिये नहीं बिनके बिधे स्थित हैं अब ईश कहिये समर्थ हैं अब दुष्ट कहिये पाप ताहुं दहन कहिये अग्नि सरोके जराय-वेवारे हैं अब सुरनाथ जो ईश ताकी जो सिद्धी कहिये संपत्ति ताके अथ कहिये आनय हैं अर्थात् जो कोरं मुरनकी सेवा करे से तार इन्द्र करदेंद हैं यावर कहिये दयादिक अब अंगन कहिये मनयादिक ओ ओवभाव तिनहुं चंदनमय नाम चंदन जैसे शीतल हैं सर्वेश कहिये सबके खामी हैं वरद कहिये वरक देववारे हैं अथय कहिये निर्भय ॥ १ ॥

The above is a good illustration of the extreme difficulty which really learned Hindus, whether they come from the east or the west of India, find at the present day in understanding their own vernacular in its earliest form. Their suggestions as to the train of ideas, traditional usage, &c., are often valuable; but their etymological explanation of particular words is frequently of the wildest and always requires confirmation. Hence the English editor of Chand must in the main depend on his own resources and stand or fall by himself.

*The Initial Coinage of Bengal under the early Muhammadan Conquerors.*  
*Part II.—By E. THOMAS, F. R. S.*

(Continued from Journal, Vol. XXXVI, 1867, p. 73.)

The discovery of an undisturbed hoard of no less than 13,500 coins in Koch Bihâr, inhumed some five centuries since, recently claimed attention both from the number and importance of its representative specimens, which so effectively illustrated the history of the kingdom of Bengal for a consecutive period of some 107 years.\* The earliest date thus accorded towards the purely Initial Coinage of the country under its newly-installed Muslim administrators did not reach higher than the reign of the Empress Raziyah, A.H. 634-637 (A.D. 1236-1239), or more than 34 years after the first entry of the adventurous *Khilji* and *Turki* troops into the recognized Hindû capital of the lower Ganges.† A still more recent discovery of a comparatively poor man's *cache*, in the fort of Bihâr,‡ elucidates an earlier chapter of the local annals: and though the contents of the earthen vessel in this case are limited in number to a total of 37 pieces, and restricted in their dates to a term of 13 years, they, in some respects, compete advantageously with the previously-recovered unexampled store, in the value of their contributions to the obscure records of the Gangetic Delta, and in priority of date bring us more than 20 years nearer to the first occupation of Bengal by Muhammad Bakhtiyâr *Khilji* in 600 A.H. As in the larger and almost regal treasure trove of Koch Bihâr, the specimens in the present instance prove to be essentially of home or indigenous fabric. With the exception of a single northern piece of the supreme *Sultân* of India, they are one and all the produce of the mints of Bengal proper, and mark with singular fidelity the varied incidents of the alternate rise and fall of the provincial governors during the unsettled relations existing between suzerain and vassal from A.H. 614 to 627, when Altamsh came into real and effectual possession of the south-eastern portion of his Empire.

\* Journ. R. A. S. (N.S.) Vol. II., 1866, p. 145. Reprinted in the Journal of the Asiatic Society of Bengal, vol. XXXVI, 1867, p. 1.

† The name of Nudden, नवद्वीप, *Navadvīpa*, the "new island" (converted into *نودیه* by the Muslims), would seem to imply a southerly movement, in concert with the silt of the Ganges, of the seat of Government down to the comparatively modern occupation of this site, on the abandonment of the successive traditional capitals of earlier dynasties.

‡ I have no information as to the exact circumstances of the discovery of this small hoard, beyond the general intimation that it was secured by Mr. A. M. Broadley, in or near the Fort of Bihâr. The coins have now become the property of Colonel Guthrie, who had already contributed the materials for my earlier notice of the Initial Coinage of Bengal.

One of the most instructive facts disclosed by these few pieces is, that the rich and comparatively undisturbed territory of Bengal felt the want of a supply of *silver* money long before a similar demand arose in the harassed provinces of the North-West. The southern coins date, as far as can be seen, some nine years prior to Altamsh's earliest effort at a silver coinage in his northern dominions; and even Raziyah's silver money of deferred date bears every token of exclusive manufacture in the subordinate Lak'hnauli mint.

I have already quoted the testimony of Minhāj i Sirāj, to the effect, that on the first conquest of Bengal by the Muslims, they found no metallic or other circulating media of exchange except that supplied by *cowries*;\* even the compromise of the mixed silver and copper *jitals* of the various Hindú dynasties of the central Itājpūt tribes was unknown in the sea-board marts of the south.

The chronicles of the proximate kingdom of Orisā, whose boundaries touched, if they did not often trench, upon the ancient kingdom of Gaur,† explain how so infinitesimal and largely distributed a currency was able to supply the wants of so rich and essentially commercial a population. It would appear, from the official records preserved in the Temple at Puri, that although there was no silver money in use, gold in convenient weights, if not in the form of absolute coin,‡ was freely interchangeable with the more bulky heaps of cowries. In these same official *palm-leaf* documents we find the powerful king of Orisā, Anang Bhīm Deo (A.D. 1174-1201), describing the geographical limits of his kingdom, specifying, with close exactitude, its now *proved* superficial area (39,107 square miles); and adding that, as the revenues of his predecessors of the Kesari line had amounted, with a more limited extent of territory, to 15,00,000 *marks* of gold, so his own added boundaries had raised the State income to 35,00,000 *marks*. Mr. Stirling (our most trusted revenue authority), relying upon still-extant local

\* J.R.A.S. (N. S.) II., p. 148. See also Hamilton's *Hindustan*, i., 40.

† Mr. Stirling says, under the Ganga Vansa line, for a period of nearly four centuries (from A.D. 1132), the boundaries of the rāj of Orisā may be stated as follows: . . . . "North, a line drawn from the Tribeni, or Triveni, (Ghat above Húglí, through Bishupúr, to the frontier of Patkum: East, the river Húglí and the sea." *As. Res.* xv. 164. Hunter i., 280. "To the north of the mouth of the Saraswati lies the broad and high Tribeni (Ghat, a magnificent flight of steps, said to have been built by Muktand Deo, the last Gajpati of Orisā." Blochmann, *As. Soc. Bengal*, 1870, p. 282.

‡ On the above occasion, likewise, a new coin and seal were struck by the Rájās orders, with the titles which are used to this day by the Khurdah Rájās, who claim to represent the majesty of this once powerful race. They run thus: *Vra Sri Gajapati, Gaur'svara*, etc. "The illustrious Hero, the Gajpati (Lord of Elephants), sovereign of Gaura (Bengal), Supreme Monarch over the rulers of the tribes of Utkalá, Karnátá, and the nine forts," etc. Stirling, *As. Res.* xv., p. 272.

tradition, defined the *mark* at 5 *māshas'* weight;\* while Dr. Hunter, under later and more vague native inspiration, pronounces it to be  $\frac{1}{4}$  of a *karishá*, which measure may be assumed to represent the local pronunciation of the old widely-spread *karsha* of Manu, corresponding with the normal weight of the gold *suvarna*, i. e. 80 *ratís*.† Taking the *ratí* at 1·75 grains, this will make Mr. Stirling's return amount to 43·75 grains ( $5 \times 5 = 25$ ;  $25 \times 1·75 = 43·75$ ) per *mark*; whereas Dr. Hunter's estimate, under the same figures, would only produce 35 grains ( $140 \div 4 = 35$ ); but, as he assumes the modern *karishá* to be equal to "one *Tolah* or one Rupee" of our modern system,—the amount of which however he does not further define‡,—and taking the 180 grain total as the test,§ the result is not far removed from Mr. Stirling's earlier estimate under the old régime;—producing, in effect, a return of 45 grains for the *mark* ( $180 \div 4 = 45$ ). But, singular to say, if we revert to the more ancient standard of the

\* Asiatic Researches, xv., 271. Mr. Stirling, however, seemed to imagine that the sum named for the total revenues, as tested by this estimate, was too high; but later investigations fully support the reasonable measure of the king's boast.

† J.R.A.S., II., pp. 169, 170. *Chronicles of the Pathán Kings*, p. 221.

‡ "Orissa," a continuation of the "Annals of Rural Bengal," (London, Smith and Elder, 1872) i., pp. 316, 317. Dr. Hunter, like myself, has endeavoured to make his antiquarian researches instructive in their application to the defects of our own government in India, consequent upon the too frequent disregard of the superior local knowledge and hereditary instincts of the races we are appointed to rule over.

After enumerating the ascertained total of the revenue of the province at various periods, the author goes on to say, "From time immemorial Orissa, like some other parts of India, has used a local currency of *cowries*. When the province passed into our hands in 1803, the public accounts were kept and the revenue was paid in these little shells." We "however stipulated that the landholders should henceforth pay their land-tax in silver, and fixed the rate of exchange at 5120 *cowries* to the rupee." (In 1804, the official exchange was 5120, and the practical rate of exchange from 6160 to 7680.) . . . "Had our first administrators contented themselves with taking payment in silver at the current rate of the cowrie exchange, the Orissa land-tax would now have been double what it is at present. But had they resolved to collect it at a grain valuation, according to Akbar's wise policy, it would now be more than double; for the prices of food have rather more than doubled since 1804. The system of paying the land-tax by a grain valuation appears to me to be the best means of giving stability to the Indian revenues."—Orissa, ii., 172. Dr. Hunter had not seen my notice of "The Revenues of the Mughal Empire" (Tribner, 1872) when this was written. I had equally appreciated the equity and suitableness of the system of estimate by agricultural produce, which had come down to Akbar's time from the earliest dawn of the civilization of the nation at large; but I had to condemn Akbar for introducing a new element in the shape of a settlement to be paid in silver, on the average of the prices of previous years—an assessment he hoped, in defiance of the proverbial uncertainty of Indian seasons, to make immutable; furnishing, in effect, the leading idea we so unwisely followed in that deplorable measure, Lord Cornwallis's "Permanent Settlement of Bengal."

§ Prinsep's *Essays*, U.T., p. 7.

*sataraktika*, or 100-*rati*\* weight,—a metric division which was reproduced and reaffirmed in the authorized *tankah* of the Pathán dynasty, and to which we have to allow a theoretical weight of 175 grains,—Dr. Hunter's  $\frac{1}{2}$  *toláh* will come out, to the exact second place of decimals, of the 43·75 ( $175 \div 4 = 43\cdot75$ ), obtained from Mr. Stirling's data.

The determination of the true weight of the *rati* has done much both to facilitate and give authority to the comparison of the ultimately divergent standards of the ethnic kingdoms of India. Having discovered the guiding *unit*, all other calculations become simple, and present singularly convincing results, notwithstanding that the basis of all these estimates rests upon so erratic a test as the growth of the seed of the Gunjá creeper (*Abrus precatorius*), under the varied incidents of soil and climate. Nevertheless, this small compact grain, checked in early times by other products of nature, is seen to have had the remarkable faculty of securing a uniform average throughout the entire continent of India, which only came to be disturbed when monarchs, like Sher Sháh and Akbar, in their vanity, raised the weight of the coinage without any reference to the number of *ratis* inherited from Hindú sources as the *given* standard, officially recognized in the old, but altogether disregarded and left undefined in the reformed Muhammadan mintages.

I may as well take this opportunity of disposing of the other technical questions bearing upon the general subject; and, without recapitulating the investigations elsewhere given at large, I may state generally, that I understand the *rati* to have been 1·75 grains, the 100 *rati* piece—reproduced in the ordinary Dihli *tankah*—175 grains. The Rájput *jital*, composed of mixed silver and copper, preserved in the early Dihli currencies of the Muslims, is  $\frac{1}{8}$  in value of the 1·75 grain silver coin; but the number of *jitals* in any given composite piece was dependent upon the proportional amount of the silver added to the ruling copper basis. The *kání*, like the *jital* is  $\frac{1}{8}$  of the *tankah*; but the *kání* is found to be the practical as well as the theoretical divisor, applicable alike to land and other measures, preserving its more special identity in the southern peninsula. Both terms have now been found in conjunction on a single piece of metropolitan fabric, where the *jital* is authoritatively declared to be of the value of one *kání*.† In more advanced days under the Patháns, immense quantities of pieces were coined to meet the current exchange

\* *Chronicles of Pathán Kings*, pp. 3, 167, 223, 224 (note). Dr. A. Weber, in the *Zeitschrift* for 1861, p. 139, cites the parallel designation of *Sata Krishnala*, from the text of the Black Yajur Veda (circa 800 B.C.). The commentator uses the local name above quoted.

† *Numismatic Chronicle* (N.S.) iv., p. 40, *et seqq.* J.R.A.S. (N.S.), II., pp. 150, 166, 168. *Chronicles of the Pathán Kings of Delhi*, pp. 161, 252.

answering to  $\frac{1}{4}$  or  $\frac{1}{2}$  of the *tankah*; and under Muhammad Tughluq, amid other useful breaks in the too-uniform descending scale of the small change, a new division was introduced in the form of a  $\frac{1}{8}$  or *sia-kánt* piece, which subsequently became better known as the *black tankah*.\*

It would appear that the normal or conventional rate of exchange of the precious metals mechanically accepted in India from the earliest times was as silver to gold 8 : 1; copper to silver 64 : 1. Of course these rates were constantly liable to fluctuation.† Indeed, we can trace the effect of the influx of the gold of the Dak'hin, after its conquest, in the fall of that metal, evidenced by the obvious readjustment of the weights of the gold and silver coinage at the Imperial seat of Government. But the copper rate must have had a very extended lease of immutability, as this ratio of 64 : 1 was maintained from the most primitive ages up to the time of Sikandar Lodi (A.D. 1488-1517).

As regards the application of these data to the examples specially under review, it would seem that the Bengal silver coinage was, from the first, deficient in weight in reference to the corresponding issues of the Dihlí mint; but the Dihlí silver coins were avowedly designed to fall in with the concurrent gold pieces of identical weight, and of full standard in metal: whereas we must suppose that the Lak'hnauli silver pieces, in introducing a new element, were graduated to exchange in *even sums* against the extant gold currency of Bengal and Orísá. Now the gold *mark* weighed, as we have seen, 43·75 grains, which, with gold as 1 to 8 of silver, would require 350 grains of the latter metal as its equivalent, or *two* 175 grain *tankahs*, reconciling alike the *four*s of the Hindú ideal, with the *fives* and *tens* of Muslim predilection; but as there is reason to believe that the local gold was not refined up to a high state of purity, this defective standard may readily account for the corresponding reduction of a few grains on the full total of the silver pieces, equally as it may have justified the acceptance of a lower *touch* in the silver itself.

Later in point of time, under Bahádúr Sháh (710-730 A.H.), the progressive fall in the value of gold is more definitively marked by the diminution of the weight of the silver piece to the uniform standard of 166 grains,‡ in contrast to the 169 grains which are preserved in some of the primary issues here described (Nos. 6, 7).

\* Pathán Chronicles, coin No. 207, p. 252. See also pp. 218, 219. I was mistaken in my first impression that the Bengal *tankahs* themselves might have a claim to this obnoxious designation. J.R.A.S., II, 160.

† In Akbar's time, even, the progressive alteration in the value of gold, since so much accelerated, had only reached the proportion of 9·4 : 1. Chronicles, p. 424. J.R.A.S., II, p. 68.

‡ Pathán Chronicles, p. 235. In my previous article in this *Journal*, I was led by

The central figure in the historical tableau, illustrated by these introductory coinages, stands prominently to the front in the person of Ghiyás-ud-dín 'Iwaz—an outline of whose career I now append.

*Ghiyás-ud-dín 'Iwaz bin Al-Husain.*

Husám-ud-dín 'Iwaz *Khiljí*, a native of Ghor in Afghánistán, on joining Muhammad Bakhtiyár Khiljí in Bengal, was entrusted by that commander with the charge of the district of Gangautrí.\* He was afterwards promoted to the important military division of Deokot,† by Qutb-ud-dín Aibak's representative commissioner in the South-east, and with his aid eventually defeated Muhammad Sherán and the other confederated Khiljí chiefs.‡ On

Ibn Batútah's indiscriminate use of the terms "Dirhams and Dínárs," in their local application in Bengal, to suppose that his definition of coin exchanges referred to the relative values of gold and silver, and that it in so far supported my estimate of 1 : 8 (J.R.A.S., II., p. 61, note 1). I now find that towards the close of Muhammad bin Tughluq's reign, the exchange had come for the moment to be 1 : 10 (Chronicles, p. 227), in lieu of the ordinary 1 : 8. The entire difficulty of the obscure passage in the Journal of the African Voyager has, however, been set at rest by the more comprehensive tables of values furnished by the Egyptian traveller Shaikh Muḥárak *Anbálf* (Notices et Extraits, xiii., 51), which show that the *dínár* of silver (i. e. the *tankah*) was equal to 8 *dirhams* (*hasht-kámf*). See also Elliot's *Historians*, iii., pp. 577, 582.

J.R.A.S. (N.S.), II., p. 157. The new and unworn pieces in the Koch Bihár *trouvaile* averaged 166 grains; and the earlier issues, of 188, 189 grains, found with them, had generally been reduced in weight to correspond with the later official standard.

\* Variant *كنكوري* — *كنكوري*, Text, p. 158, and MSS. I have preserved Stewart's version of the name in my text, but the site of *Gangautrí* has not been identified. There is a town called Gurguri (21° 23'; 86° 55') on the line of country between Bihár and Nágór, but it is not known to have been a place of any mark. There is also a celebrated fort of high antiquity on the same line of communication, named Gúder (21° 53'; 86° 55'), which may have served as an outpost of the Bihár head quarters.

† Deokot (lat. 25° 18'; long. 88° 31'), the chief place in Gangarámpúr (district of Dínájpúr), is now known by the name of Damdamá. Hamilton states that "it received its present appellation from its having been a military station during the early Muhammadan Government" (p. 50). Muhammad Bakhtiyár, after his first success against the King of Bengal at Nadiyá (that 23° 25'; long. 88° 22'), contented himself with destroying that town, and withdrew his troops nearer to his base of communications, to a position about 90 miles to the northward, somewhere about the site of the future Lak'hnaúf, Deokot again being some 50 miles N.N.E.

Minháji Siráj, in describing Lak'hnaúf, at a later date (641 A.D.), mentions that the province lay on both sides of the Ganges, but that the city of Lak'hnaúf proper was situated on the western bank. The author adds, that an embankment or causeway (بُل) extended for a distance of ten days' journey through the capital from Deokot to Nágór in Bírḥúm, (lat. 23° 56'; long. 87° 22').—Stewart's *Bengal*, p. 57. Persian text of *Talauqát-i Nágírí*, pp. 161, 162, 243. *Kín-i-Akḥarí*, ii. 14. Elliot's *Historians*, ii., p. 318, iii. p. 112. Rennell's *Map*, p. 55. Wilford, *As. Res.* ix., p. 72.

‡ The subjoined curious notice of the distribution of the boundaries of the kingdom of



the definite appointment of 'Alī Mardān Khiljī to the kingdom of Bengal by Qutb-ud-dīn Aibak, he paid his devoirs to the new Viceroy by meeting him on the Kúsi, and accompanied him to Deokot, where he was formally installed in power. When Qutb-ud-dīn died at Lāhor, in 607 A.H., 'Alī Mardān assumed independence under the title of 'Alā-ud-dīn; but after a reign of about two years, he was slain by the Khiljī nobles, and Husām-ud-dīn was thereupon elected in his stead (608 A.H.). History is silent as to when he first arrogated kingly state, and merely records Shams-ud-dīn Altamsh's expedition against him in 622 A.H., with the object of enforcing his allegiance to the Imperial crown, when, after some doubtful successes, peace was established on the surrender of 38 elephants, the payment of 80 *laks* [of *tankuhs* ?], and the distinct recognition of Altamsh's suzerainty in the public prayers, with the superscription of his titles on the local coinage. The Emperor, on his return towards Dihlī, made over the government of Bilār to 'Alā-ud-dīn Jānī, who, however, was not long left undisturbed; for the Southern potentate speedily re-annexed that section of his former

Bengal shortly before the Muhammadan conquest has been preserved in Hamilton's 'Hindustan.' The compiler does not give his specific authority.

"During the Adisur dynasty, the following are said to have been the ancient geographical divisions of Bengal. Gaur was the capital, forming the centre division, and surrounded by five great provinces.

"1. Barendra, bounded by the Mahamanda on the west; by the Padma, or great branch of the Ganges, on the south; by the Kortoya on the east; and by adjacent governments on the north.

"2. Bangga, or the territory east from the Kortoya towards the Brahmaputra. The capital of Bengal, both before and afterwards, having long been near Dacca in the province of Bangga, the name is said to have been communicated to the whole.

"3. Bagri, or the Delta, called also Dwīpa, or the island, bounded on the one side by the Padma, or great branch of the Ganges; on another by the sea; and on the third by the Hugli river, or Bhagirathi.

"4. Rarhi, bounded by the Hugli and the Padma on the north and east, and by adjacent kingdoms on the west and south.

"5. Maithila, bounded by the Mahamanda and Gaur on the east; the Hugli or Bhagirathi on the south; and by adjacent countries on the north and west."

"Bollal Sen, the successor of Adisur, is said to have resided partly at Gaur, but chiefly at Bikrampur, eight miles south-east of Dacca." Bollal Sen was succeeded by Lakshmana Sen, who was defeated by Muhammad Bakhtyār. The author continues, "it is possible that the Raja only retired to his remote capital, Bikrampur, near Dhākā, where there still resides a family possessing considerable estates, who pretend to be his descendants. We also find that Soomergong, in the vicinity of Bikrampur, continued to be a place of refuge to the Gaur malcontents, and was not finally subjugated until long after the overthrow of Rājā Lakshmana."—Hamilton's *Hindustan* (1820) i., p. 114.

و چون او [محمد شیران] مہتر امرای خلیج بود همگان اورا  
Text, p. 158. خدمت می کردند و ہر امیر بر اقطاع خود می بود.—Stewart's *Bengal*,  
p. 51. Elliot's *Historians*, ii., p. 315.

dominions,—an aggression which was met, in A.H. 624, by the advance of Náçir-ud-dín Mahmúd, the eldest son of Altamsh, in force, who, in the absence of Ghiyás-ud-dín 'Iwaz on distant enterprises, succeeded in obtaining possession of the new seat of government. In the subsequent engagement, the Bengal army was defeated, and Ghiyás-ud-dín killed, after a reign estimated by the local annalist at 12 years.\*

This is all the information we are able to gather from the incidental biographical notices furnished by our sole authority, Minháj i Siráj, that most intelligent employé of the rulers of Dihli, and welcome visitor at the Court of Lak'hnauti in A.H. 641, where he saw and appreciated the material undertakings of this self-made king, whose memory he lauds enthusiastically. A tribute Altamsh had virtually anticipated, when he was at last permitted to behold the glories of his adversaries' capital, in 627 A.H., and then conceded the tardy justice of decreeing, that in virtue of his good works, Ghiyás-ud-dín 'Iwaz should, in his grave, be endowed with that coveted title of *Sulţán*, which had been denied to him while living.†

We have now to examine how far the recently discovered coins will fill in this defective historical outline.

COINS STRUCK IN THE NAME OF ALTAMSH, in Bengal.

No. 1. Silver. Size, 7½. Weight, 168 grains. *Unique*, in this date.

Pl. x. fig. 1. A.H. 614.

OBVERSE.

|

REVERSE.

السلطان المعظم

*Device.*

Horseman at the charge.

الدنيا والدين

*Margin—*

ابوالمظفر الشمش الطنبجي

لا اله الا الله [محمد] رسول الله

ناصر امير المؤمنين

بذاريخ اربع عشر وستمائة

\* Allowing 'Alí Mardán from 607—8 to 609—10, this leaves an interval up to 612 during which Husáin-ud-dín 'Iwaz was content to remain head of the Khiljí oligarchy and local governor.

† Tabaqát-i Náçiri, Text, p. 163. Mr. Blochmann has an interesting paper, in the September number of the *Indian Antiquary* (p. 259), on Muhammadan Titles. Among other questions discussed is the derivation and early application of the title of *Sulţán*. The author remarks that "the first clear case of *Sulţán* having been used as a title belongs to the time of Rukn-ud-daulah, deputy over Fárs, under the Khalífah Al Muţf' billah," A.H. 338, or A.D. 940. MM. Oppert et Ménant were under the impression that they had discovered the title so early as the time of Sargon, who, in his grand inscription at Khorásbád, is said to speak of Subaco as "*Silţán*, or *Sulţán* d'Egypte."—*Journal Asiatique*, 1863, p. 9, and *text*, p. 3. Commentary, 1864, p. 10. Some doubt has, however, been thrown upon this identification, as the designation reads optionally, if not preferably, *شرك*. Schröder, Cuneiform and Old Testament Studies (1872), p. 167.

The date of A.H. 614, this earliest numismatic record contributed by the Bengal mints, is further remarkable as the epoch of Altamsh's final assertion of supremacy on the defeat of his last powerful competitor in Hindústán, Náçir-ud-dín *Qubáchah*, after he had already disposed of his other prominent rival, Táçir-ud-dín Ilduz, in 612 A.H. The issue of these provincial coins, at this conjuncture, would seem to attest the first voluntary recognition of Altamsh by Husám-ud-dín 'Iwaz, who was at this time in undisturbed possession of Bengal and its dependencies. The adoption of the Cavalier device on the obverse may have been suggested by the conventional acceptance of that design on the money of the native princes of the North-west, whose hereditary types were copied by Muhammad bin Sám, and retained for a long period by Altamsh himself. In the new mintage, however, the Rájput horseman with his spear is superseded by the Túrki Cavalier with the historical mace,\* and the general outline of the coarse Northern steed may perchance have been heightened to record a triumph, or to carry a menace to the subjected Bangáls,† who had left their king to escape ignominiously, and virtually surrendered their capital to the eighteen troopers of Muhammad Bakhtyár's advance guard.

Among other peculiarities of these coins is the tenor of their legends, which differ from the ordinarily adopted Imperial intitulations of the Sultán, who is here designated as *القطبي*, the slave or freedman of Qutb-ud-dín Aibak, —a term which may have concealed a latent taunt to one who was now supreme in the chance virtue of his arms, or may otherwise indicate the independent Khiljí method of discriminating the followers of Qutb-ud-dín

\* Mahmúd of Ghazni's favourite weapon. Tradition affirms that it was preserved in all honour by the guardians of his tomb at Ghazni. (Atkinson, *Expedition into Afghánistán*, p. 222). So much credence was attached to this ancient legend, that we find Lord Ellenborough in 1842 instructing his generals in sober earnestness, to "bring away from the tomb of Mahmúd of Ghazni his club which hangs over it." Muhammad Bakhtyár himself had also won glory by the use of his mace in his gladiatorial encounter, single-handed, with an elephant, who was compelled to retreat before the first blow of his powerful arm.

† The name of *Asvapatis*, "Lords of Horses," was subsequently applied specifically in Orisá to the Muhammadan conquerors. Mr. Hunter remarks, "The Telugu Palm Leaf MSS. state that between (Saka 895) A.D. 972 and A.D. 1563, three great powers successively arose. During this period, the *Gajapatis*, 'Lords of Elephants,' ruled in Orissa and the north of Madras; the *Narapatís*, 'Lords of Men,' held the country to the southwards. The Lords of Horses were the Musalmáns, who, with their all-devouring Pathán cavalry, overthrew the two former."—*Orissa*, ii., p. 8. Stirling, *Asiatic Researches*, xv., p. 254. Kín-i-Akbarí, Gladwin's translation, i., p. 319. Abul Fazl, in describing the game of cards, affected by his royal master, speaks of "*Ashvepat*, the king of the horses. He is painted on horseback, like the king of Delhi, with the Chutter, the Alum, and other ensigns of royalty; and *Gajpat*, the king of the elephants, is mounted on an elephant, like the king of Orissa."

as opposed to the Mu'izzi faction of the nobles of Hindústán, who had already tried conclusions with each other, to the disadvantage of the latter.

No. 2. Gold. Weight, 70·6 grains. *Unique. Gaur, A.H. 616.\**

OBVERSE.

REVERSE.

المعظم

Horseman at the charge.

شمس الدنيا والدين

In the field—فرب نكور

ابو المظفر الدمشقي

Margin—

القطبي

لا \* \* \* رسول الله بفاربخ منه

المومنين †

عشر وستمائة

This unique gold coin of the period, put forth under Muslim auspices, is of more than usual value in confirming the locality of the mint of its counterparts in silver, which are deficient in any geographical record; indeed, none of the Bengal coins, which form the bulk of the *trouvaile* to which the present notice is devoted, bear any indication of the site of which they were struck. Found, however, in company with so many clearly local pieces, there would have been little hesitation in assigning them to the southern division of the new Muhammadan empire; but the distinct announcement of the place of issue of the gold piece is of importance, not only in fixing definitively the then head-quarters, but in presenting us with the name of *Gaur*, ‡ regarding the use of which, at this epoch, there was

\* For a figure of the coin, *vide* *Chronicles of the Pathán Kings*, p. 78.

† Qilij Arslán, the Saljúq of Anatolia (A.H. 656), uses this title of *برهان امير المومنين* (Fræhn, p. 156). The three sons of Kai Khusrau (A.H. 647) employ the term in the plural *براهين*.

‡ I need have no hesitation in admitting that on the first examination of this piece, as an isolated specimen of a hitherto unknown mintage, I was disposed, in the absence of any dot either above or below the line of writing, to adopt the alternative reading of *نكور* instead of *بكور*, while confessing a preference for the latter transcription, on account of the need of the preposition ب (*Chronicles of the Pathán Kings*, p. 79); but, at the time, I was unprepared to expect that Altamsh's sway had extended to the lower provinces, which were avowedly in independent charge of the Khilji successors of Muhammad Bakhtyar. This difficulty is now curiously explained by the concurrent silver pieces, and the supposition that the local chieftain found it expedient to profess allegiance, nominal or real, to the preponderating influence of the master of Hindústán. In like manner, the recently discovered silver coins have supplied a clue to the more satisfactory decipherment of the marginal legend, and the explanation of other minor imperfections in the definition of the exotic characters of the gold coin, which it is useless to follow in detail.

some controversy.\* Advantage has been taken in this, to the native comprehension, more elaborately-finished piece, to insert in the vacant spaces on the field, above and below the main device, the words, ضرب بگور "struck at Gaur," and although the requisite dot below the *be* has escaped definition, there need be little doubt as to the purport of the entry, which it was not thought necessary to reproduce on the less-esteemed silver money, whose status with the mint officials, as equally with the public at large, ranged at a lower level.

The date of 616 A.H. on this coin, supported and in a measure explained as it is by the marginal legend on No. 3, proves that the professed allegiance of the local ruler of Bengal to the head of the followers of Islām at Dihlī, was no momentary demonstration, but a sustained confession of vassalage extending over one complete year, and portions of the previous and succeeding twelve months.

The topographical record on No. 2 would further seem to show that Husām-ud-din had not as yet transferred his capital to the new site of *Lak'hnauli*, to the west of the river, whose designation first appears in a definite form on the coins of the Empress Raziyah, in A.H. 635.†

No. 3. Silver. Size, 7. Weight, 168 grains. *Very rare.*

Pl. x. fig. 2. A.H. 616.

OBVERSE.

السلطان

شمس الدنيا والدين

ابوالمظفر البندش

REVERSE.

Horseman at charge.

Margin—

لا اله الا الله محمد رسول الله

بتاريخ سنة ست وعشرو ستمائة

No. 3a. Variety. Weight, 162 grs. Pl. x., fig. 3. Date illegible. The Persian legend on the obverse is given in very imperfectly defined characters, and offers the peculiarity of the insertion of the Hindī letters *श*, for *Shāh*, above the name of the king, thereby indicating that both die-engravers and the local public were naturally better versed in the old alphabet than in the newly-imported letters of the conquerors.

\* J.R.A.S. ii., n.s., p. 187. Cf. also Albirūnī; Reinand, *Mémoire sur l'Inde*, p. 296, quoted in J.R.A.S. i., n.s., p. 471. *As. Res.* ix., 72, 74; xvii. 617. Wilson's *Glossary*, *sub voce*, etc. Rennell, *Map of Hindūstān*, p. 55. Stewart's *Bengal*, pp. 44, 57.

† *Chronicles of the Pathān Kings*, p. 107. J.R.A.S., n. s., II., p. 187, coin No. 14 *infra*.

## COINS OF GHIYĀ'S-UD-DĪN 'IWĀZ.

No. 4. Silver. Size, 7½. Weight, 161 grs. (full weight.)

Pl. x., fig. 4. A.H. 616. (7 specimens.)

## OBERSE.

السلطان  
المعظم غياث الدين  
و الدين ابو الفتح  
عوض بن الحسين ناصر  
امير المؤمنين

## REVERSE.

لا اله الا  
الله محمد  
رسول الله

ضرب هذه السكة في  
شهر سنة ست عشرو ستماية

Coin No. 4 teaches us that in the same year 616 A.H., in the early part of which Husām-ud-dīn 'Iwāz had confessed allegiance to Altamsh, he seemingly grew weary of such pretences, and openly declared himself *Sulṭān* in his own right, assuming the regal title of *Ghiyās-ud-dīn*, and the quasi-hierarchical function implied in the designation of *Nāṣir Amīr Al Mūminīn*, "Defender of the Commander of the Faithful." Whether this overt assertion of independence was suggested by his own growing power, or was due to the imagined weakness of the suzerain, is not clear; but there can be no question as to his success in the extension and consolidation of his dominions, or to his vigorous administration of a country, fertile in the extreme, and endowed with such singular commercial advantages of sea and river intercourse.

At this particular juncture, Altamsh does not seem to have been pressed by any important home disturbances, but there were dark clouds on the N. W. frontier. The all-powerful 'Alā-ud-dīn Muhammad *Khārazmī*, whose outpost extended over so large a portion of Asia, had been coining money in the inconvenient proximity of *Ghaznī* throughout the years 613, 614-616, A.H.;\* and no one could foretell when he might follow the ordinary precedent and advance into Hindūstān. As fate determined, however, it was left to his son *Jalāl-ud-dīn* to swim the Indus, at the risk of his life, as a fugitive before the hosts of Chingīz Khān, in 618 A.H.

The mention of *Chingīz Khān* suggests to me the desirability of repeating a correction, I have already recorded elsewhere, of a singular delusion, shared alike by native copyists and English commentators, regarding one of the supposed incidents of the sufficiently diversified career of this scourge of the world, to the effect that his unkempt savages had penetrated down to the impossible limit of the lower Ganges. The whole series of mistakes, Asiatic or European, may now be traced back to a simple clerical error in the transcription from a chance leading copy of the ordinarily rare work of Minhāj i Sirāj—where the name of *Chingīz Khān* جنگیز خان has been substituted for the more obvious designation of the ancient town of *Jājnagar* جاجنगर.

\* J.R.A.S. ix., 381; xvii., 202; *Chronicles of Pathān Kings*, p. 86.

Modern authors, examining a single passage, might well have felt reserve in reconstructing at hazard a primary version; but the editors of the Calcutta official printed text have gone so far towards perpetuating the enigma they were unable to unravel, as to add to the difficulties of solution by making Chingiz Khán fight (so far on his way to Lak'hnaúti) the memorable battle of Perwán [30° 9' N., 69° 16' E.] on the conveniently converging site of Badáon (p. 348), which was situated on one of the favourite main lines of transit to the south, east of the Ganges. This conglomeration is, however, the less excusable, as Stewart, in his *History of Bengal*, had already pointed out Ferishtah's palpable mistake to the same effect; and the editors themselves unconsciously admit the preferable variant of جاجنجر inserted in the foot-note, p. 199. Dr. Hunter, I see, in his new work on Orissa (ii. 4), incautiously follows Stewart's first impressions, in the notion that the "vanity" of Muhammadan historians had intentionally "converted the attack of the humble Orissians into an invasion of Tartars" (Stewart, p. 62).\* I myself prefer the more obvious and direct explanation above given, which perhaps reflects more upon our defective criticism than upon Muslim vanity.†

\* Mr. Stirling, in his most exhaustive Memoir on Orissa, published in the Asiatic Researches in 1822, observes:—"Major Stewart, in his *History of Bengal*, places an invasion of Orissa by the Mussalmans of Bengal during this reign, that is A.D. 1243. The Chronicles of the country contain no mention of such an event. I have not Major Stewart's authorities at hand to refer to, but strongly suspect that he has been led into an error by mistaking some word resembling Jajipur, for Jajipur in Orissa. He expresses himself thus: 'In the year 614 (A.D. 1243), the Raja of Jagepur (Orissa) having given some cause of offence, Toghan Khan marched to Ketasun, on the frontier of Jagepur, where he found the army of the Raja had thrown up intrenchments to oppose him'. . . . Now, in the first place, Jajipur was never a separate principality, as here described; and there is no such place in Orissa as Ketasun. Ferishtah is altogether silent on this subject in his history of Bengal, but in his general history he ascribes the siege of Gour, in the very year in question, to a party of Mogul Tartars who had invaded Bengal by way of Chitta, Thibet, etc. Dow's mistake of a similar nature is scarcely worth noticing. He makes Sultan Balin pursue the rebel Toghrul into Jajnapur (A.D. 1279), which he calls *Orissa*, whereas it is evident from the mention of Sunargaon as lying on the road, that Jajnapur is some place beyond the Ganges."—Stirling, *As. Res.* xv., p. 274.

It seems to have escaped Mr. Stirling's notice, that Stewart had already corrected his own error in speaking of "Jagepore" as "*Orissa*," pp. 61 and 65, by placing that town in its proper position in "Tipperah," in a later passage (p. 70); and he further improved upon his advanced knowledge by saying in a note, at p. 72, "Jagenagar is said to have been a town in Orissa, near Cuttack; but this passage proves it to have been situated on the eastern side of the Burhampooter. The Jagenagar mentioned by Ferishtah should have been written Jagepore." [P] Stewart, *Hist. Bengal*, p. 72. Dow, i. 202 (4to. edit.). Briggs i., 260. See also *Chronicles of Pathán Kings*, p. 121.

† Cf. Elphinstone (new edit. by Professor Cowell), p. 377. Elliot, *Muhammadan Historians* ii., pp. 264, 344, Dr. Lee's Ibn Batáshah, *Oriental Tr. Fund*, p. 97. Ferishtah

No. 5. Silver. Size, 8½. Weight, 165 grs. A.H. 617.  
(2 specimens.)

## OBERSE.

السلطان  
المعظم غياث الدنيا  
والدين ابو الفتح  
بن الحسين ناصر امير  
المومنين

## REVERSE.

لا اله الا  
الله محمد رسول  
الله  
ضرب هذه السكه في—Margin  
التاريخ السابع عشر وستمائة

No. 6. Silver. Size, 8. Weight, 169. (Coarse badly formed legends).  
A.H. 617. (2 specimens.)

## OBERSE.

السلطان الاعظم  
غياث الدنيا والدين  
ابو الفتح عوض بن الحسين  
ناصر امير المومنين و  
ولي عهده علا الحق  
والدين

## REVERSE.

لا اله الا الله  
محمد رسول الله  
الناصر لدين الله  
امير المومنين  
ضرب هذه السكه في—Margin  
شهر صفر سنة مائة وستمائة

No. 6a. Variety. One example gives the altered marginal reading of

ضرب هذه السكه في ربيع الآخر سنة سبع \* \* ستمائة

Al Nācīr li-dīn Illāh was invested in the Khilāfat in A.H. 575, and died on the 1st Shawwāl, A.H. 622 (5th October, 1225, A.D.). Bar Hebraeus, *Abulfaraj*, pp. 269–301. Ibn Aṣīr, p. 285, fixes his death at the end of Ramazān. Price, *Muhammadian History*, ii., 210.

The tenor of the legends of the consecutive issues of A.H. 617 disclose an increasing confidence in his own power on the part of *Ghiyās-ud-dīn 'Iwaz*, in the addition made to his previous titles, and in the assumption of the superlative *Al A'zam*, "the highest," as the prefix to the *Al Sulṭān* in place of the heretofore modest adjective of *Al Mu'azzam*, "the great."\*

*Bombay Persian Text*, i., p. 122. *Badāonī, Calcutta Persian Text*, p. 88. *Ṭabaqāt i Nāqiri, Calcutta Persian Text*, pp. 157, 163, 190, 243, 245.

\* Altamash himself seems to have been indifferent to this distinction, but its importance is shown in the early coinage of Muhammad bin Sām, who invariably reserves the superlative prefix for his reigning brother, while he limits his own claims to the virtually comparative *المعظم*. And further to mark these gradations, he prominently adopts the higher title after his brother's death. *Chronicles of Pathān Kings*, pp. 12, 13, 14. *Ariana Antiqua*, pl. xx., figs. 29, 35.



Here, for the first time in this series, we meet with the official or regnant designation of the Khalifah of Baghdád, who has hitherto been referred to by the mere generic title of "Commander of the Faithful."

It would appear from this innovation, as if Ghiyás-ud-dín had already, indirectly, put himself in communication with the Pontifical Court at Baghdád, with a view to obtaining recognition as a sovereign prince in the Muslim hierarchy,—a further indication of which may possibly be detected in the exceptional insertion of the *month* in addition to the ordinary *year* of issue on the margin of No. 6a.; a specification which will be found more fully developed in the succeeding mintages, where it admits of an explanation which is not so obvious or conclusive in this instance.

No. 7. Silver. Size, 9. Weight, 169 grs. Pl. x., fig. 5.\* Dated 20th of Rabi' ul ákhir, A.H. 620. (7 specimens.)

OBVERSE.	REVERSE.
غياث الدنيا	لا اله الا الله
والدين ابو الفتح ع	محمد رسول الله
في بن الحسين قسيم امير المؤمنين	الناصر لدين الله
سلطان السلاطين في الدنيا	امير المؤمنين
والدين ابو المظفر على يده	في التاريخ العشرين — Margin
امير المؤمنين	من شهر ربيع الآخر سنة
خلد الله ملكه	عشرين و ستماية

No. 7a. Variety. Weight, 165 grs. Coin of the same date and similar character, which transfers the complete name of *عزى* into the third line; the dubious prefix to the second *والدين* *الدنيا* reads more as *معزى*, while the suggested *يده*, above given, appears as *يدنو*.

If the preceding coins had left any doubt as to Ghiyás-ud-dín's designs in regard to the assumption of sovereign power, the tenor of the legends on Nos. 7 and 7a, would conclusively set that question at rest. Here, not content with the recently-arrogated title of *السلطان الاعظم*, we find him calling himself "*Sulṭān of Sulṭāns*," by direct appointment of the

\* See also Marsden, No. DCCLVII, p. 564. There are two coins of this type in his collection in the British Museum. Marsden remarks, "The date of this coin, the earliest of those belonging to the princes who governed Bengal in the name of the Kings of Dehli, but who took all opportunities of rendering themselves independent, is expressed distinctly in words. . . . The titles and patronymics of the Sulṭān by whom it was struck are for the most part illegible; not so much from obliteration, as from the original imperfect formation of the characters."

Khalifah,\* associated with which is the entry of a specific date, with the still more unusual definition of the day of the month, which is preserved constant and unvaried throughout the entire issue. More remarkable still is the abnormal departure from the conventional form of coin legends, in the omission of the preliminary "*Al Sulṭān*," and the abrupt introduction of the regnal title of the once probational *Husām-ud-dīn*, under his more ambitious designation of *Ghiyās-ud-dīn*. In short, the entire drift of the altered superscription points to an intentional reproduction of some formal phraseology, such as would be eminently consistent with an official transcript of the *reversed* precept emanating from Baghdād.

I should infer from these coincidences that a formal diploma had by this time been conceded by the Supreme Pontiff, admitting the newly-erected kingdom Bengal within the boundaries of Islām, and confirming the reigning monarch in possession, with added titles and dignities. The date so prominently repeated may either be that upon which the patent was originally *sealed*, or more probably it points to the auspicious moment of the reception of the ambassadors, who conveyed the formal document and paraphernalia of investment, at the Court of Lak'hnautī. This assignment in no way disturbs my previous attribution of the inaugural piece of Altamsh,† marking his attainment of the like honours in A.H. 626. The very concession to the Bengal potentate possibly led his once suzerain to seek a parallel sanctification of his own rights, which he had previously been content to hold by the sword: and the difficulty of communication with Baghdād over alien kingdoms and disturbed frontiers would account for a delay of the emissaries on the one part and the other, which would not affect the open ocean passage between the mouths of the Ganges and the sea-port of Baqrah.

\* The term *علي يدى* is of frequent occurrence on the early Muslim coinages, and is usually associated with the name of the officer—whatever his condition—responsible for the mint issues, as *علي يدى احمد*, which is translated by Frāhin as "*manibus*" (i. e. *curā et operā*) *Ahmadi* or "*curante*,"—a definition accepted in later days on the Continent as "*par les mains de, par les soins de*, etc. In the present instance it would seem to imply a more or less direct intervention by the Commander of the Faithful himself in favour of his nominee.

† Initial Coinage of Bengal, J.R.A.S. ii. n.s., p. 154, No. 1, *note*; *Chronicles of the Pathān Kings*, p. 46. Of course, this exceptional issue will now have to cede priority of date both to the Bengal coin of A.H. 614, etc., and likewise to the northern piece of Altamsh, No. 8, which must be taken as anterior to No. 10.

## COIN OF ALTAMSH.

No. 8. Silver. Size 8½. Weight, 168 grs. Square Kufic characters, which seem to belong to Lâhor or some northern Mint.\* Pl. x., fig. 6. A.H. 62\*.

OBVERSE.	REVERSE.
السلطان	لا اله الا الله
المعظم شمس	محمد رسول
الدنيا و الدين	الله الناصر لدين
ابو المظفر ايلندمش	الله امير المو
السلطان يمين خليفه	منين
الله ناصر امير	Margin— هذا الضرب ؟
المومنين	عش [ و ين و ست مائه

BENGAL COINS OF ALTAMSH SUBSEQUENT TO THE RE-ASSERTION OF HIS IMPERIAL SWAY.

No. 9. Silver. Size 8. Weight, 161 grs. Bengal type of coin. A.H. 622.

OBVERSE.	REVERSE.
السلطان	As in Nos. 6 and 7,—coins of
المعظم شمس الدنيا و	Ghiyâs-ud-din, with the name of
الدين ابو المظفر ايلندمش	the Khalîfah <i>Al Nâçir-li-dîn Illâh</i> .
السلطان يمين خليفه	Margin—
الله ناصر امير المو	هذا الضرب في شهر منه اثني
منين	عشرين و ستماية

Altamsh does not seem to have found it convenient to proceed against his contumacious vassal, who was now ready to meet him on almost equal terms, till A.H. 622, when the coinage immediately attests one part of the compact under which peace was secured, in the exclusive use of the name

\* *Chronicles of the Pathân Kings*, p. 15. Pl. i., figs. 4—8.

† This word as designating the coin is unusual; but we have the term *دار الضرب* for the Mint, and the *الفضة* or *السكة* of the *ضرب هذه*, etc., as the ordinary prefix to the *القرب*, which, however, Pathân monarchs. The letters on the Bengal coins look more like *القرب*, which, however, does not seem to make sense. Fræhn long ago suggested that the word *ضرب* ought to be received as a substantive, especially in those cases where the preposition *ب* did not follow it, in the given sentence, as a prefix to the name of the mint city.

of the Emperor of Hindústán on the money of Bengal.\* That the issue represented by No. 9, proceeded from the local mints, is evident alike from the style and fabric of the pieces, their defective metal, and the uncouth forms of the letters of the legends.

No. 10. Silver. Size 8. Weight 168 grs. (2 specimens.) Pl. x., fig. 7, A.H. 624.

## OBERSE.

السلطان الاعظم  
شمس الدنيا و الدين  
ابو المظفر ايلنمش  
السلطان ناصر امير  
المومنين

## REVERSE.

لا اله الا محمد  
رسول الله  
الظاهر بامر الله  
امير المومنين  
ضرب هذ ... شهر سنة اربع  
وعشرين و ست مائه  
Margin—

Al Zāhir bi-amrillah, the Khalifah whose name is inscribed on this coin, succeeded his father on the 2nd of Shawwāl, A.H. 622, and died on the 14th Rajab, A.H. 623 (July 11, 1226, A.D.). Bar Hebraeus, *Abulfaraj*, p. 302.

No. 11. Silver. Size, 7. Weight, 167 grs. *Unique*. Pl. x., fig. 8, A.H. 624.

Square area, within double lines, following the pattern of some of the examples of Muhammad Ghori's coins.

السلطان الاعظم  
شمس الدنيا و الدين  
ابوالمظفر ايلنمش  
السلطان ناصر

The words امير المومنين are inserted in the interstices between the square area and the circular marginal line, as in the Dihli coins of Bahrán Sháh.†

## REVERSE.

Legend in the area as in the last coin, with the name of the Khalifah Al Zāhir.

ضرب ... سنة اربع  
وعشرين و ست مائه

\* غياث الدين عوفى خلجي رقبه خدمت دربرقہ انقياد آورد و مي [سي و هشت]  
زنجير پيل و هشتاد لك مال بداد و خطبه و سكه بنام مبارك شمسى كرد  
Calcutta text, pp. 163, 171.

† Chronicles of the Pathán Kings, p. 118.

It might be supposed to be an open question as to whether Ghiyās-ud-dīn 'Iwaz or Nāṣir-ud-dīn *Mahmūd*,—the eldest son of Altamsh and his viceroy in Bengal—presided over the mints which put forth the coins classed under Nos. 10 and 11. As regards the latter, at present *unique*, piece, there can be little doubt, from its assimilation to the ordinary Dihlī models, that it formed a portion of the revised and improved coinage of the south after Mahmūd's defeat of Ghiyās-ud-dīn in 624 A.H. In like manner, the introduction of the term *الاعظم* on No. 10, as a prefix to the title of *Sultān* Altamsh, points to a feeling of filial reverence, which is altogether wanting even in Ghiyās-ud-dīn's repentant manifesto in the legend of No. 9. Mahmūd's appointment to the government of Audh dates from A.H. 623,\* and the tenor of one of the narratives of Minhāj i Sirāj would imply that he proceeded southwards with but little delay; so that all coins bearing the date of 624, with the name of Altamsh, might preferentially be assigned to his interposition, more especially as Ghiyās-ud-dīn at, and prior to this, period had placed himself in a renewed attitude of insurrection.

*Coin of Nāṣir-ud-dīn Mahmūd Shāh, as Viceroy in Bengal.*

The administration of the Bengal mints under the official auspices of Nāṣir-ud-dīn *Mahmūd*, as developed in the issues Nos. 10, 11, leads up to and confirms with more full effect an identification I have hitherto been obliged to advocate in a less confident tone—that is, the attribution of the piece, figured in my 'Chronicles of the Pathān Kings,' p. 81, to the eldest son of Altamsh, at some period towards the close of his brief career. With these newly-discovered evidences of his overt intervention in the local currencies, the transition to a subdued and possibly paternally-sanctioned numismatic proclamation, in his own name, would be easy, more especially if that advance was made simultaneously with the effusive reception at Dihlī of the reigning Khalīfah's earliest recognition of Altamsh's supremacy, coupled with the desirability of making this Imperial triumph manifest in those southern latitudes, where other dynastic names had already claimed a prior sanctification.†

\* Persian text, 180.

† Minhāj i Sirāj, after completing his account of Nāṣir-ud-dīn's conquest of Ghiyās-ud-dīn 'Iwaz, and the transmission of the spoils to the Sultān at Dihlī, continues—

و چون تشریفات دار الخلافه بحضورت سلطان شمس الدین طاب ثراه  
رسید از آنجمله یک تشریف گرانمایه با چتر لعل بطرف لکهنوتی فرستاد ملک ناصر  
الدین علیه الرحمة بدان چتر و تشریف و اکرام مشرف گشت و همگان را از ملوک  
و اکابر مملکت هند نظر بدو بود که وارث مملکت شمسی او باشد . فاما \* \* بعد از  
یکمال و نیم \* \* بر حمت حق تعالی پیوست .  
p. 181

(See also Elliot's *Historians*, ii., pp. 326, 329.) The Khalīfah's emissary arrived at Dihlī on the 22nd of Rabi'-ul-Awwal, (3rd month of) A.H. 626, p. 179, and news of the death of Nāṣir-ud-dīn Mahmūd reached the capital in the 5th month of the same year, p. 174.

Such an authorized augmentation of the Prince's state is rendered the more probable, as Altamsh in a measure shared with his favourite son the honours and dignities conferred by the Khalifah, and simultaneously extended to him the right to use an umbrella with the tint of Imperial red.\* Nāqir-ud-dīn Mahmūd, the contemporary biographer remarks, was from that time looked upon as the recognized successor to the throne of Hindūstān. Equally, after Mahmūd's premature death, his father still so held him in honour that his body was brought to Dihlī, and enshrined under one of the choicest domes that Eastern Saracenic art could achieve, which to this day, amid its now broken marbles, stands as a monument of the virtues of this prince, and preserves in its decaying walls the remains of† the *first* royal tomb of the slave kings erected near the capital,‡ on the shattered entrance arch of which we can still trace the devotional prayer of the father for the soul of his son, whose mundane glories he briefly epitomizes as "King of Kings of the East," implying, in the conventional terms of the day, all India beyond the Ghāgrā.

And still further to secure a contemporary memento of his lost heir, Altamsh conferred the same name and title upon a younger son, who, in his

\* The founder of the Ghaznawī dynasty, the Great Sabuktigin, assumed regal state under the shadow of a *red* umbrella. Altamsh's ensigns are described as *black* for the right wing *رايات ميمنه سياه*, and *red* for the left wing *رايات ميسره لعل*. Mu'izz-ud-dīn Muhammad bin Sam's standards bore the same colours, but the discrimination is made that the *black* pertained to the Ghōrīs, and the *red* to the Tūrks, p. 127. Ghiyās-ud-dīn Muhammad bin Sam used *black* and *red* for the two wings respectively, p. 83.

† INSCRIPTION ON THE TOMB OF SULTAN GHĀZĪ [NĀSIR-UD-DĪN MAHMŪD] AT DIHLĪ, DATED A.H. 629.

امر ببناء هذه القبة المباركة السلطان المعظم شاهنشاه الاعظم مالك رقاب  
الاعم ظلى الله في العالم ذو الامان لاهل الذمه سلطان لسلطين شمس الدنيا  
والدين المخصوص بعنايت رب العالمين ابي المظفر الممش السلطان ناصر امير  
المومنين خلد الله ملكه اروضة ملك الملوك الشرق ابي الفتح محمود تعمود الله  
بغفرانه واسكنه كنف نعيم جده في شهر ربيع ثلث سنة ثمان و عشرين و مئتمية ١١

This Tomb, which is known at the Maqbarah of Sultān Ghāzī, stands amid the ruins of the village of Malikpūr Koyi, about three miles due west of the celebrated Qutb Minār. Kāsar-us-Sanādīd, Dihlī, 1854, pp. 23, 30 (Nos. 12, 18, Facsimile), and 60 (modern transcript revised). See also Journal Asiatique, M. G. de Tassy's translation of the *Urdū* text; also Journal Archæological Society of Dehli, p. 57, and Hand-book for Dehli, 1863, p. 85.

‡ Rukn-ud-dīn Firāz Shāh, another son of Altamsh, who for a brief period held the throne of Dihlī, found a final resting-place on the chosen site of Malikpūr; and his brother in deferred succession, entitled Mu'izz-ud-dīn *Bahram Shāh*, followed him into the Tomb of the Kings in the same locality.—Kāsar-us-Sanādīd, pp. 25, 26. Elliot's *Historians*, iii, 382. *Chronicles of Pathān Kings*, p. 290.

turn, was destined to occupy the throne of Dihlī for twenty years, and the name of Nāṣir-ud-dīn Mahmūd was perpetuated anew in the next generation under another dynasty, as the designation of Balban's heir, who carried it back to Bengal, where he was permitted to found a new family of southern kings, who for half a century succeeded in maintaining a fitful sovereignty, seldom disturbed by the more powerful Sultāns of Hindústān.

No. 12. Silver. Size 8. Weight, 163.1 grs. *Unique.* British Museum. *Vide* Chronicles, p. 81.

## OBSERVE.

السلطان الاعظم  
ناصر الدنيا والدين  
ابوالمظفر محمود  
شاه بن سلطان

## REVERSE.

في عهد الامام  
المستنصر بالله امير  
المومنين

Al Mustanṣir billah was inaugurated on the 14th of Rajab, 623 A.H. = 1226 A.D., the same day that his father Al-Zāhir died. Bar Hebraeus, p. 303.

I quote in illustration of my previous remarks, the legends on the special issue of Altamsh on the occasion of the receipt of his diploma of investiture in A.H. 626.

Weight of the B. M. Coin, 164 grains.

OBSERVE— لا اله الا الله محمد رسول الله

REVERSE—As above, in No. 12, with similarly formed characters.\*

It may be noted that on a like occasion of the reception of the Egyptian Khalifāh's diploma at Dihlī in 744 A.H., Muhammad bin Tughluq adopted a similar method of exhibiting his respect by introducing the pontiff's name on the coinage to the exclusion of his own.

The identification of the individual, who styles himself Daulat Shāh with many high-sounding prefixes, on the subjoined coin, demanded a certain amount of patient patch-work, which I have relegated to the note below.†

\* Chronicles of the Pathān Kings, p. 46.

† در ماه جمادى الاولى سنة ست وعشرين وستمائة خبر فوت ملك سعيد ناصر الدين محمود برسيد بلكا ملك خلجي در ممالك لكهنوتي عصيان آورد و سلطان شمس الدين طاب ثراه لشكراي هندوستان بطرف لكهنوتي برد و در شهر منه سبع وعشرين وستمائة آن طاعى را بدست آورد و تخت لكهنوتي بملك علام الدين جاني داد عليه الرحمة و در رجب همين سال بمحضرت جلال دهلي باز آمد ॥

Suffice it to say that *Dawlat Shāh bin Maudūd* is the person who is spoken of elsewhere as Ikhtiyār-ud-dīn BALKĀ\* *Khiljī*, and who appears in history on the single occasion of his possessing himself of the kingdom of Bengal on the death of Nāqir-ud-dīn Mahmūd, and his subsequent suppression and capture on the advance of Altamsh's forces in the selfsame year, 627 A.H., he was unwise enough to record on his unauthorized coinage.

No. 13. Silver. Size 9½. Weight., 168. *Uniquis.* Plate x., fig. 9.  
A.H. 627 ?

OBVERSE.

المستنصر بالله  
امير المومنين السلطان  
الاعظم شمس الدنيا و الدين  
ابوالفتح ايلنمش السلطان  
برهان امير المومنين

REVERSE.

السلطان  
العاذل شهنشاه باذل  
علا الدنيا و الدين ابوالغازي  
دولتشاه بن مردود  
عضد خليفه الله ظهير امير المومنين  
• • شهر منه سبع  
عشرين و ستماية

The reading of *ابوالغازي* is speculative: the letters *العا* are distinct, as are also the two dots of the *ي*, but that latter *itself* cannot be traced, and the visible remains of the character succeeding the *العا* are more like *لي* than the suggested *زي*.

سلطان سعيد شمس الدين چون بديار لکهنوتي رسيد بعد از فوت ملک ناصرالدين  
محمود طاب ثراه و دفع فتنة ملک اختيار الدين بلکا  
Calcutta Text, p. ۱۶۲

In the printed text, under the *first* Court Circular list of the *ملوک و اقرباء* of *Sultān Shams-ud-dīn*, we find the following entry *دولت شاهرخلي* *ملک لکهنوتي*; and in the *second* document, purporting to be a variant of that official return, we read *بلکا خلجي* *ملک اختيار الدين ايران شاه* (pp. ۱۷۷ and ۱۷۸), which latter version is greatly improved by the Oriental Lord Chamberlain's list preserved in a MS. in the B. M. (Addit. No. 26,189), which associates more directly the *title* with the *name*, and identifies the individual as *ملک اختيار الدين دولتشاه بلکا*.

\* The word *Balkā* has exercised the commentators. It may be found, however, in the early Ghasnawī name of *Balkā-tigin*. *بلکا* means a "camel colt," and *لکين* is "handsome."





1



7



2



3



4



5



9



6





# APPENDIX

TO THE

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CONTAINING

VOCABULARIES OF NAGA HILL TRIBES,

*by Capt. J. BUTLER and S. E. PEAL, Esq.*

The plan I have adopted for designating the long sound of all vowels has been by placing an accent immediately over the vowel; thus á is pronounced like the Italian *a*, or like the English long *a* as pronounced in such words as "mast," "father," "ask," &c.

ó like the English *a* in "fate," or *e* in "prey," "convey," &c.

í ir like manner has the sound of the French *i*, or English *ee* as in "peep," or *i* as it is pronounced in such words as "fatigue," "marine," &c.

ó as the *o* in "notice"; and finally

ú similarly to the English long *o* as in "move," "prove," &c., or *oo* as in "school," "tool," "fool," &c.

[Appendix,

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angámi Nágá.	Rengmá Nágá.	Kutchá Nágá.
A, an, or one, <i>a</i> . Etá, Abandon (let-Erdé, go), <i>v</i> .	Sáosi, Masi, Hángar,	Isi, Honkí,		Khat, Lhatan, létan,	Po, Dhá-Khasiché,	Kémmé,	
Abdomen, <i>a</i> . Tolpét, Above, <i>prep</i> . Uporot, Absent, <i>a</i> . Gorhazér,	Hoh, Pshao, Gurri,	Ipoh, U'nhoi,		Koi-Kaoi, Chung, Aumhi,	Váká, Vádi, Mho, Tomo,	Aghén, Tésho,	
Abundance, <i>a</i> . Horoh, Accept, <i>v</i> . Loh, Grohon- kor,	Kéhang, Lá, Khotiá, Horoh, Grohon- kor,	Anung, Ponon,		Atim, Látun,	Kia-pézé, Lélé,	Kéchang, Khlé khé,	Kédá Lúlu

Accompany, <i>v.</i>	Logot Já,	Logúthang,	Langlungúno, Hengchetang,	Kézétollé,	Háigákhé,
Accurate, <i>a.</i>	Thik,	Bausi,	Chingbarehit, Kibang,	Tú,	Kérvénto,
Ache, <i>n.</i>	Bédéná, Bikh,	Sádu,	So-ong, Anái,	Chi, Shi,	Thébéno,
Acid, <i>n.</i>	Tengá,	Mikhí,	Thé,	Kroh, Khié,	Késhang,
Acquaintance, <i>n.</i>	Sinákí,	Bussá, Mithi,	Kshét-ngái,	Késiná, Úr-	Kenthonmé,
Advance, <i>v.</i>	Ág-ho,	rc,	Mashatun,	Rále,	Régatá,
		Séangjá,	Analumché-		
			tang,		
Advantage, <i>n.</i>	Lábh,	Aláp,	Alép,	Mévi,	Akuraché,
Adversary, <i>n.</i>	Hotrú,	Arléng hingo,	Míglo,	Kénguma,	Phinimú,
Adult, <i>n.</i>	Déka,	Rissomár,	Thungwál,	Khisáma,	Ponniu,
Adze, <i>n.</i>	Sins,	Sát,	Hékhupga,	Kethi,	.....
Afar, <i>ad.</i>	Duroi,	Heloving,	Alá, Gumlapi,	Shachá,	Kétháng,
Affection, <i>n.</i>	Isto,	.....	Alúngshie,	Khré,	.....
Affray, <i>n.</i>	Kilá-kili,	Chichok,	Akidélui,	Kevo,	Kéga,
After, <i>prep.</i>	Pásot,	Yaonghúnga,	Núngsung,	Sá,	Shéki,
Afternoon, <i>n.</i>	Abéli, or Bha-	Aphi,	Nisagéhitai,	Thékhéva,	Sungweméso,
	tibélá,	Amibéng,			
Again, <i>ad.</i>	Akáo, or Pu-	Apár,	Húmbolkilir,	Lá,	Hiangwo,
	norai,				
Age, <i>n.</i>	Boyoh,	Nikúnkun,	Nésuna,	Képenotá,	Chán,
Agod, <i>n.</i>	Bura,	Sarbutra,	Téhsi,	Kétchá,	Pétiniu,
Ague, <i>n.</i>	Komp-jor,	Sodét Kéch-	Akilot,	Kipé,	Luvénioor Ru-
		ung,			vénio,
Air, <i>n.</i>	Botáh,	Timon,	Húi,	Timelhu,	Chembé,
Alike, <i>ad.</i>	E'ké-likhiá,	Chimklong,	Múnkhutto-	Kémhá,	Althiáágwén-
			bang,		to,
Alive, <i>a.</i>	Jiá,	Akering,	Ahing,	Rhi,	Akérhung,
All, <i>a.</i>	Átái,	Kédoh,	Abonni,	Pété,	Atang,
					Haimná

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angami Nágá.	Rengmá Nágá.	Kutchá Nágá.
Alligator,	<i>n.</i> Ghoríál,	Géné,	Timong,	Wallé,	Rá, Khokérrá,	Kérrá,	
Almighty,	<i>a.</i> Hokoloré-hok-	Khoribjong-	Aiakung thé-		Petekiké me-	Athaké árhé-	
	ti,	boldong,	ong,		chiaswé,	nia,	
Alone,	<i>a.</i> Okol,	Sáojang,	Inúna,	Kutchung,	Thé, Hébi,	Mémé, Empú	
Aloud,	<i>ad.</i> Borkoi,	Ráohi,	Yasomét,	Hapúsétum,	Rékré,	Unré, Kézong,	
Also,	<i>ad.</i> Áró,	Ar,	.....	.....	Ri,	.....	
Altogether,	<i>ad.</i> E'kú logé,	Gáthaisi,	Kédokávé,	Númchat,	Pété-Kézé,	Kochang,	
Always,	<i>ad.</i> Hodái, Orco,	Nállé,	.....	.....	Té-sonhá,	.....	
	Nito,						
Amid,	<i>prep.</i> Maj, majat,	Gajér,	Angbong,	Aláilung,	Métcho-mi,	Azogá,	Kát
An, a, one,	<i>a.</i> E'tá,	Sáosi, mási,	Inúnan	or Khat,	Pó,	Kémné,	
			Inút,				
Anele,	<i>n.</i> Bhorir gánthi,	Yasuthái,	Kélaugbi,	Káokhimit,	Phimhi,	Phabéro,	Dé
And,	<i>conj.</i> Áró,	Ar,	.....	.....	Ri,	.....	
Anger,	<i>n.</i> Khong,	Thámsí,	Nimingthip,	Alúngsaahi,	Nimo,	Aionkhé,	
Annually,	<i>ad.</i> Bosoré-bosor,	Maithai-mai-	Aninkan-anih-	Kúmkhút,	Tichiképrá,	Achang,	
		thai,	kan,	Kunni,			
Ant,	<i>n.</i> Porá,	Khashima,	Misú,	Shingshang,	Mháché,	Tenta,	Ntiéná
Ant-hill,	<i>n.</i> Hápholo,	Horima-há-	Téplong-ánú-	Léwangin,	Repá,	Unpiong,	
		phlo,	rak,				
Apiece,	<i>ad.</i> E'tá-étá,	Mási-mási,	Isi-isi,	Khut-chiang-	Po-po,	Kémé-kémé,	
				khut-chiang			
Armaddillo,	<i>n.</i> Kéntai,	Kháítai,	Kárpú,	Sephú,	Tépphu,	Tépphé,	Héppá
Armet,	<i>n.</i> Kháru,	Yáoshér,	Roi,	Nathankul,	Kétho,	Gi,	
Armpit,	<i>n.</i> Káthloti, Bo-	Phám-khor,	Jing káp,	Kájaniui,	Sochú,	Ániobsong,	
	gol,						



English.	Assamese.	Kachári.	Mikir.	Kúki.	Angami Nágá. Réngma Nágá.	Kutchá Nágá.
Bark, (of a tree)	১. Sál,	Pongur,	Théngú,	Thingoh,	Pokú, Sijha,	
Bark,	২. Bhúnk,	Shongmá,	Kánú,	Ahup,	Ré-shi,	Sháinhél, or Shingél,
Barn,	৩. Bhonráli ghor,	Mainoh,	Sokporú,	Changin,	Telha-ki,	Kérían,
Barrel, (gun)	৪. Noli,	Noli,	Allaungpong,	Meipumlong,	Pú,	Tiswán,
Barter,	৫. Holáo,	Salai-jalainú	Chilárná,	Kiléhngché,	Kélli,	Pong,
Basin,	৬. Kanhi,	Khopira,	Kású,	Kúng,	Mékhú,	Kélléché,
Bastard,	৭. Johorrah,	Pauij péssá, or Pophá-giri-yábt, péssá,	Sorongro,	.....	Tékhrono,	Túkhong,
						Kéoblangnin,
Bat,	৮. Bádoli,	Taupána,	Warplak,	.....	Ché-chá,	Sémphong,
Bathe,	৯. Gá-dho, or Suankor,	Digrunang,	Chingluji,	Késiltum,	Zuréluché,	Lahté,
Battle,	১০. Ron,	Chélabá,	Ron,	Gál,	Térh,	Téri,
Beak,	১১. Thont,	Bokho,	Anktúr,	Amú,	Ta,	Méng,
Beam,	১২. Sótú,	Súkúr,	Karlóng,	Inkum,	Ki-pér,	Kásun,
Bear,	১৩. Bhélúk,	Mussúbroma	Thogwám,	Vompí,	Thégá,	Thágúá,
Beard,	১৪. Dáni,	Khamphor,	Múng,	Klámul,	Támá, Mekh-wémá,	Múmai
Beat,	১৫. Kúáo, Már,	Sho,	Choknun,	Voton,	Vúché,	Vúché or Vúta,
Beautiful,	১৬. Húndor,	Naibahani,	Méong,	Véti náphai,	Ngú-kévi,	Gwásáwá,
Bedstead,	১৭. Húá-khát,	Thúthani,	Ki-ládm,	Jálkhun,	Thézi,	Nang, Long,
Bedding,	১৮. Túli,	.....	Káchlinápé,	Pomphá,	Zikhrá,	Zikéshéngphé,
Bee,	১৯. Mo,	Péréká, or Pé-Pio, ré,		Húivá,	Mékhwi,	Jéokum
						Héllá



Beef,	<i>n.</i> Gorúrmongoh,	Méshoháin,	Cháinongáok,	Shilhutshá,	Mithúchi,	Ménthútha,	
Before,	<i>prep.</i> Agot, Hamú-khé,	Hamú-Sékang,	Aphráng,	Mésang,	Mohzú,	Hodi,	
Beg,	<i>v.</i> Mañg,	Sainji,	Chúháng,	Thúménétun,	Krohchiléché,	Hétah, Hélo-	
Beggar,	<i>n.</i> Mogonia,	Sainjiába,	Kédúkébang,	Miváicha,	Kroh-kéchi-má,	Hékátániu,	
Behind,	<i>prep.</i> Pisot, Pásoť,	Yáonhúng,	Aphi,	Núnglam,	Sáchá,	Shégi,	
Behold,	<i>v.</i> Dékh, Sá,	Nái,	Lánguún,	Vetún,	Pilé,	Phítá,	
Belch,	<i>v.</i> Hiñkoti kor,	Hánglúngmu-maibá,	Ijoi,	Kasaie,	Pekhé,	Kénja,	
Bellow,	<i>v.</i> Bába,	Kérrábá,	Kángrong,	Sélabú,	Moché,	Kánga,	
Belly-ache,	<i>n.</i> Bét-kámor,	Hohsádú,	Apoksodet,	Káowai onái,	Vadiché,	Ghéntha,	
Belly,	<i>n.</i> Pét,	Hoh,	Apok,	Kaowai,	Vádi, Vaká,	Ghén,	Po
Below,	<i>ad.</i> Tolot,	Paklá,	Abér, Arúm,	Anoi,	Kho, Khro,	Téshang,	Káng
Belt,	<i>n.</i> Tongáli,	Chishidao,	Ari,	Kongkánna,	Sésá,	Sangkhuréng,	
Bend,	<i>n.</i> Pak, Mosor,	Pháikhong,	Pékeknún,	Hékontun,	Kéréguilé,	Akengkhú,	
Best,	<i>a.</i> Utom,	Hamdáo,	Jérsomémo-	Aphápéntá,	Kévithou,	Athaiángwá-	
			chot,		Sésá Kévi,	shwá,	
Better,	<i>a.</i> Tátkoi bhál,	Késsá-hám-dáo,	Jérsoméong,	.....		Hiangwhá,	
Between,	<i>prep.</i> Majot,	Kéjar,	Angbong,	Alaiúlúng,	Donú, Meteloh-nú,	Azoká,	Káká
Beware,	<i>v.</i> Háodhán-ho,	Táthang,	Phuréma,	.....	Chiswéléché,	.....	
Big,	<i>a.</i> Dañgor,	Tébi,	Théong,	Léupakhi,	Kézá,	Kéang,	Kédi
Bill-hook,	<i>n.</i> Dáu,	Shishong,	Nokpak,	Chinpong,	Jé,	Jhén,	
Bind,	<i>v.</i> Bándh,	Khá,	Koknún,	Kantan,	Phálé,	Phénogotá,	
Bird,	<i>n.</i> Sorái,	Táo,	Vo,	Vachá,	Pérá,	Téga,	Rhina
Birth,	<i>n.</i> Jonom,	Gokhá, Hájai-bá,	Amangáthé,	Naasowé,	Péno, Képéno,	Niubénio,	

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angúmi Nágá.	Réngmá Nágá.	Kutchá Nágá.
Birth-place, <i>n.</i>	U'pojá-thai, or Jonomo-bhúmi.	Hájaiha, Hathanai.	.....	.....	Képénophé,	Kénuphén,	
Bitch, (female of dog.)	Máiki Kúkúr, <i>n.</i>	Sémájúk,	Mithunapi,	Winú,	Phúkr,	Téhiphú, or Téhtenin,	
Bite, <i>v.</i>	Kámor,	Wai,	Kornoi,	Petún,	Méki,	Unkáté or Unkáché,	Nki
Bitter,	Títá, <i>a.</i>	Khábi,	Akého,	Akhái,	Kékú,	Kékha,	Ketbé
Black,	Kóliá, <i>a.</i>	Késhim,	Akéik,	Avom,	Kéti,	Kéché,	Michiépe
Blind,	Kóná, <i>a.</i>	Kána,	Amikávé,	Mitcho,	Mhichié,	Hékéchang,	Hézai
Blood,	Téz, <i>n.</i>	Théi,	Ávi,	Thi,	Thézá, [bébá,	Tézié,	Mápá
Blossom,	Koli, <i>n.</i>	Khém,	Mir,	Amumbim,	Punilha, or Thé-Mién,		
Blow,	Phúñ-dé, <i>v.</i>	Shú,	Kibút,	Mútun,	Mhélé,	Téshi,	Nizai
Blue,	Kám boroniá, <i>a.</i>	.....	.....	Adumé,	Loshi,	.....	
Board,	Pát, <i>n.</i>	Bongflong,	Kápát,	Thingphél,	Méiá, Sobja,	Shénpang,	Liámkúá
Boat,	Náo, <i>n.</i>	Rong,	Tillong,	Kóung,	Rú,	Rúng or Rong,	Liam-Ketasaimi
Boatman,	Náoworia, <i>n.</i>	Rongiaoyábá,	Tillongkévé,	Kóungábho,	Rú kethumá,	Rúngécho,	Méo
Body,	Gá, <i>n.</i>	Sáo,	E'laag,	Kati,	Moh,	Meh or Um-mén,	
Boil,	U'toláí dé, or Hájai dé, <i>v.</i>	Méthonghá,	Karklók,	Go-omsán,	Mékhrolé,	Und-wávésho,	
Bold,	Háhiá, or Nir-bhoi, <i>a.</i>	Bakharobi,	Phéréré,	Kékichapúí,	Kérézá,	Kémé késsa,	Rá (Pérá)
Bone,	Hár, <i>n.</i>	Pákrain,	Répi,	Shagú,	Rú,	Thirra,	Léshú
Book,	Púthi, <i>n.</i>	Khitáp,	Khitáp,	Lékhá,	Léshi,	Láshi,	
Boot,	Jútá, <i>n.</i>	Jútá,	Kengok,	Kéng-ko,	Phikú,	Pházaka,	
Borrow,	Dhár-kor, <i>v.</i>	Jaolá,	Rámunún,	Athunglá-tun,	Thépulé,	Tépúréttá, or Tépérétá,	

Bottom,	<i>n.</i> Tol, Gúri,	Pákhá,	Abér,	Átókú,	Khro,	Téshing,	Hérai
Bough,	<i>n.</i> Dál,	Bondé,	Ahoi,	Théngbá,	Sí Chié, Sicho,	Shémphá,	Héllé, Piar
Boundary,	<i>n.</i> Himá,	Harri,	Batthi,	Gichang,	Thiérrá,	Térré,	
Bowls,	<i>n.</i> Dhénú,	Chilli,	Phég,	Gophé,	Thilla,	Lóbú,	
Box,	<i>n.</i> Nari-bhunrú,	Púbú,	Piré,	Kágl,	Poriá,	Ré,	
Boy,	<i>n.</i> Pérá,	Sundú,	U'sú,	Théng kong	Kuzo,	I'rá,	Hénami
Bracelet,	<i>n.</i> Kharú,	Khádu,	Roi,	Chápang,	Niehuná,	Unchainin,	Hétá
Brains,	<i>n.</i> Múror ghiun,	Bithim,	Atarloh,	Cháu,	Yétsé,	Pén,	Khúá
Brass,	<i>n.</i> Pitol,	Phisé,	Bitol or Bitoi,	Lhobú,	Khú,	Sha or U'nsha,	Pitalaigéo
Breadth,	<i>n.</i> Potháli,	Kébéng,	Arpún,	Shumung,	Mérén,	Péngi,	
Break,	<i>v.</i> Bháng or Sing,	Sépailla,	Phlangúnun	.....	Zá, Poza,	Ada,	
Breast,	<i>n.</i> Hiya, Búkú,	Khábo,	Ning,	.....	Bésuélé,	Voségo,	Kaká
Breath,	<i>n.</i> U'háh,	Háng,	Anghoáugh- win,	.....	Mérr,	Miong,	
Breathe,	<i>v.</i> U'kháh lo,	Hánglabú,	Echéthé,	Léi	Há shiché,	Untésini thétá,	
Bridge,	<i>n.</i> Dolong,	Dolong, Yao- khrai,	Dolong,	.....	Péh,	Long,	Kepúm
Bring,	<i>v.</i> Án,	Labú,	Wanún,	Honchoitan,	Séphiri, Pé- khor,	Séngrotá,	Pépélo
Broad,	<i>a.</i> Bohol,	Kétho,	Héong,	.....	Méjá,	Kezang,	
Broad-cloth,	<i>n.</i> Bénát kápor,	Banor-ri,	Mánát ápé,	.....	Búlá-Khwé,	Búnaphé,	
Broken,	<i>pari.</i> Bhángá or Singá,	Paikhá,	Lokpé,	Akéatai,	Vaphroá, Bét- swéwá,	Akésé,	
Broom,	<i>n.</i> Barhoni,	Naoship,	Arphék,	Múnthé,	Nizwéro,	Kázékhá,	Sosingbé
Brother (el- der.)	<i>n.</i> Kokái,	Dadá,	Niik,	Káupá,	Zoráo,	Ságh,	
Brother,	<i>n.</i> Bhái,	Jányáng,	Nimú or	Kánáupá,	Sázéo,	Sézhing áhor,	Sárebé
(younger) <i>n.</i>		Adong,	Nékor,	.....	.....	Sezhungé,	
Brother-in- law,	<i>n.</i> Jéthéri,	Aghnu,	Némé,	.....	.....	Amú,	

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angámi Nágá.	Réngmá Nágá.	Kutchá Nágá.
Brow, Buck (deer)	n. Kópál, n. Mota pohú,	Tháin, Chella,	Téhang, Thiókalo,	Kedéipong, .....	Tikhá, Tékúá-poshi,	Samphuh, Téshangpécha,	Kési
Buffalo,	n. Moh,	Misép,	Jilong,	Loi,	Réli,	Sanchong,	Réli
Build,	v. Hojá,	Tangmá,	Kimnun,	Sátan,	Siléché,	Thiélotá,	Télo
Bull,	n. Har, Bhotorá,	Mesú-jéllá,	Chainongalú,	Bongchul,	Thudo,	Máuthé,	Ké túmsó
Bullet,	n. Goli, Gúli,	Goli,	Goli or Amú	Mechang,	Mishi-shi.	Páché,	Hégebaichi
Bundle,	n. Topolá,	Páko,	Alor,	Ponchún,	Kéri,	Goli,	
Burden,	n. Bhár,	Papan,	Bhár,	.....	Pé,	Adúá,	
Burn,	v. Porá, [Phútá]	Sáoha,	Kainon,	Chalbín,	Réwála, Pétú-	.....	
Burst,	v. Phútáí dé,	Pérékhokla,	Phukdak,	.....	Baphroá, Pro,	Rolota,	
Bury,	v. Pót,	Phabi,	Pibon,	Gáplútun,	Khrúálé,	Shonko,	
Butterfly,	n. Tokhilá,	Tamá,	Pipling,	Péngpilép,	Sopro,	Ása,	
Button,	n. Gúdám,	Gútám,	Gúdám,	Shankhokil,	Búla-Kékú,	Gúdám,	
Buy,	v. Kin,	Párai,	Nánnún,	Chútán,	Kliri-léché,	Hilota,	Lúlulo
By-and-by, ad.	Athoni,	Yaokhúng,	Mo-áphi,	.....	Yá,	.....	
Bird cage,	n. Soráior hojá,	Khangkhúá,	Vo-un,	.....	Térékhén or	Togakhen,	
Calf,	n. Dámuri,	Mésopéssá,	Chainongáso,	Chilutmi,	Mithúno,	Ménthúno,	Kétúmpúna
Calf (offleg.)	n. Kol phul,	Yákihú,	Sárti,	Kátangai,	Phit-sá,	Chén,	
Call,	v. Mát,	Longhá, or	Hangnún,	Gákotún,	Kési-ché,	Kolokottá,	Kúlo
		Chirhúikhá,					
Cane,	n. Bént,	Rái,	Pri,	Ting,	Thiér,	Téra,	aria
Canon,	n. Bor Tóp,	Kamon,	Bortope,	.....	Sidi,	.....	Higbé-kedibé
Cap,	n. Túpi,	Topi,	Photú,	Lúchú,	(Misi kéli, i.e. great gun,) Churé,	Pithong,	Potom

Carry,	<i>v.</i> Bú, Boja lo,	Hor bá,	Inghomon,	Potan.	Potú,	Prulotá,	Pélo
Cat,	<i>n.</i> Mekú, i,	Mú,	Méng,	Méngté,	Munno,	Ái,	Hanina
Catch,	<i>v.</i> Dhor,	Rém,	Niébnún,	Mántun,	Télé,	Ténota,	Tulo
Caterpillar,	<i>n.</i> Bisá,	Yongshimá,	Unki,	Lúngmúl,	Chopé,	Pong,	
Centipede,	<i>n.</i> Sélá,	Séntshrekómá,	Lútiki,	Chingling,	Zár,	Sémbé,	
Chaff,	<i>n.</i> Ghulá,	.....	.....	.....	Phá,	.....	
Chain,	<i>n.</i> Hikoli,	Jingri,	Ghainhemáre,	.....	Kélú,	Bengriso,	
Change,	<i>v.</i> Holoni kor,	Shlainúng,	Chilarnung,	.....	Kélilé,	Kéféla,	
Charcoal,	<i>n.</i> Engar,	Hángar,	Hogwái,	Méhol,	Mijé,	Mégi,	
Chase,	<i>v.</i> Khéd,	Rúpái-rú- phaintha,	Hungdonon,	Dilijitun,	Holé,	Hagatá,	
Chasp,	<i>v.</i> Hostá,	Pángá,	Mélo,	Aménédong,	Méli,	Gwáso,	Lalé
Cheek,	<i>n.</i> Gál,	Khaolái,	Om,	.....	Jwé Jo,	Riánto,	Biá
Chicken,	<i>n.</i> Kúkúrá púali,	Daopéshá,	Voaso,	Anúsén,	Théno,	Térreno,	
Child,	<i>n.</i> Lorá,	Anchá,	Oso,	.....	Níchúma,	Anin,	Hénámi
Chun,	<i>n.</i> Thontorá	Khoshika,	Bip,	Kékhlang,	Métho,	Soko or Sokhe,	
	Thútori,						
Civet Cat,	<i>n.</i> Géndérá,	Múru,	Kethoi,	Sángá,	Thékrr,	Khonjú,	Shéhwi
Clap,	<i>v.</i> Sápuri bojá,	Támá,	Chendép,	.....	Bida,	Inbákhé,	
Claw,	<i>n.</i> Nók,	Yáoshukor,	Ri,	.....	Phitché,	.....	
Clean,	<i>n.</i> Sophá, Nirmol,	Hamkhá,	Mésénlo,	Angunshé,	Mésá,	Gwa,	
Cleave,	<i>v.</i> Phál,	Phikhaobá,	Képi,	Kénishútun,	Phrolé,	Diokhologotta,	
Cloth,	<i>n.</i> Kápor,	Réi,	Pé,	Pon,	Khwé,	Phé,	
Cloud,	<i>n.</i> Mégh, Dáor,	Kolkhiúl á,	Inghon,	Méi,	Kénhiú,	Khella-Késsi,	
Cobweb,	<i>n.</i> Mokorá jál,	Pémankhuno,	Aram,	Ápán,	Sérécha,	Hantéroka,	
Cock,	<i>n.</i> Motá Kúkúrá,	Dáojéllá,	Volo,	.....	Votzi,	.....	
Cold,	<i>n.</i> Sénsá,	Késhánné,	Kánsám,	Ádunavé,	Mekú, Si,	Shéshé, Kong,	
Cold season,	<i>n.</i> Járkál,	Máising,	Ningkreng,	Phálbi,	Tisi,	Chiéshé,	
Come,	<i>v.</i> Ah,	Phai,	Vangnú, n,	Hongtun,	Phirehé,	Yor- lokotta,	
					ché,	Réchéphitá,	
Comprehend,	<i>v.</i> Bújpá,	Méthilá,	Arjún, n,	Néhémáén,	Siléché,		

English.	Assamese.	Kacháři.	Mikir.	Kúki.	Angámi Nágá.	Réngmá Nágá.	Kutchá Nágá.
Conceal,	v. Lúkuá,	Hoidádén,	Chipátúnón,	Gashéltun,	Kéváléché,	Kévéléché, or Kébélegot- tá,	
Cook.	v. Híjuá,	Shong,	Tínón,	Hontán,	Sháléché,	Vánlogottá,	
Copper,	n. Tám,	Tám.	Tám,	Shomshún,	Páisáji,	.....	
Cord,	n. Jorí,	Wátu,	Phámri,	Khaohul,	Kérré,	Rénganú,	
Cost,	n. Dám, Dor,	Péshén,	Ador,	Anún,	Poná,	Amén,	
Cotton,	n. Kopáh,	Khún,	Phélló,	Patbo,	Chopsa,	Chot-Téphú,	
Cover,	v. Dhá,	Tháphúnátun,	Limnon,	Khúkhúntun,	Shénótá,	Shénótá,	
Count,	v. Lékh, Gononá,	Sain,	Lékhánún,	Shimtémin,	Phréliché,	Phúlo-gotá,	
Cow,	n. Gorú,	Meshojo,	Chainong ápi,	Chilhatun,	Thukr,	Ménthaimio,	Kétúm púi
Cow-dung,	n. Gohor,	Méshokli,	Chainongáhi,	Chilhaté,	Mithúbo,	Ménthébbú,	
Coward,	n. Bhoiátúr,	Khéniabásé- bong,	Phénéong,	Mimédoi,	Kémithiná,	Unthúbinio,	
Cowree,	n. Kori,	Kháodi,	Súbai,	Lúngchung,	Késá,	Táshí,	
Crab,	n. Kénkorá,	Kháng-Khrái,	Chéhi,	Ái,	Ségo,	Chégú,	
Crazy,	n. Boliá,	Kébir,	Angchamdú,	Mingolali,	Kéloho,	Kén-Kénoinu,	
					wémá,		
Crooked,	n. Bénká,	Kokúí,	Kékláng,	Akon,	Kéréngwi	Khurá,	Hégá
Crow,	n. Káuri,	Daóká,	Voák,	Vá-ú,	Shíja,	Tégú,	
Cry,	v. Kánd,	Kérrádé,	Chirúnot,	Káptan,	Králé,	Chilota,	
Cubit,	n. Hát,	Khujalá,	Echiák,	.....	Thú,	U'nká,	
Cup,	n. Bati,	Phongtho,	Harlong,	Vaulhéng,	Téli,	Hangpén,	
Custom,	n. Dostúr, Niom,	Tará,	Aron,	.....	U'zié,	[gotta,	
Cut,	v. Kát,	Tain,	Thunon,	.....	.....	Déta or Délo-	



English.	Assamese.	Kacháiri.	Mikir.	Kúki.	Angami Nágá.	Réngma Nágá.	Kutchá Nágá.
Drum,	a. Dhol,	Khrám,	Chéng,	.....	Kébbá,	Bén,	
Drunk,	a. Motal,	Poglaiaá,	Hongangri,	Kémézá,	Injévémon,	.....	
Dry,	a. Húkán,	Ráinkhá,	Akréng,	.....	Késsa,	Akénkoh,	
Dry,	v. Húkua,	Karrainkhlai,	Khréngnon,	.....	Só,	Phologottá,	
Dung,	a. Gú,	Khi,	Hi,	.....	Bo,	Abú,	
Dysentry,	a. Khor,	Hosháábá,	Képavi,	.....	Thézá-bo,	.....	
Ear,	a. Kán,	Khámbao,	E'no,	.....	Nié,	Nitun,	
Earring,	a. U'nti,	Khérrí (for male),	(for Nothengpi, and Nori, and Keding-metai (for chingro,	.....	Rénmi (for males),	Unbén (for males),	
Earth,	a. Pritlibi,	Há,	Longlé,	.....	Kízi,	biníé (for females),	
Earthquake,	a. Bhúinkoupp,	Panglá,	Chikali,	.....	Kiéki,	Kázi,	
East,	a. Pú,	Sáunphnébá,	Niháng,	.....	Náki-kéthú-chá,	Chingánié,	
Eat,	v. Khá,	Chi,	Choliáng,	.....	Chi,	Túlogotta,	
Egg,	a. Koni,	Daoti,	Voti,	.....	Dzo,	Di,	
Eight,	a. Áth,	Chái,	Nirkép,	Ghit,	Théthá,	Tassé,	Héssa
Eighteen,	a. Othéro,	Mághichai,	Khrénérkép,	.....	Mékú-pomo-théthá,	Kipuntassé,	
Eighty,	a. Ási,	Pishábrí,	Throknirkép,	Shonghit,	Lhé-théthá,	Hain-tassé,	Rhé héssa
Elbow,	a. Kilákúnti,	Váoshukong,	Eritúngké,	.....	Bútú,	Khoshé	
Elephant,	a. Hái, Hanti,	Méyung,	Ingnár,	.....	Chú, Tsú,	Piong,	Hoppúa
Eleven,	a. E'gháro,	Máishé,	Kré-isi,	Shom-le-khat,	Théva,	Sérrah-kame-sha,	Kéké
Evening,	a. Godhúli,	Sárriri,	Ningréting,	Hojinkon,	Mhi,	Réugémésó,	
Eye,	a. Sokú,	Mhú,	Mék.	Mit,		Nghé,	





English.	Assamese.	Kachári.	Mikir.	Kúki.	Angami Nágá	Réngma Nágá.	Kutchá Nágá.
Fish,	n. Mās,	Ná,	Lángok,	Ngá,	Kho,	Diniú saba,	
Fish-hook,	n. Borokhi,	Phishú,	Arpi,	Ngá-kui,	Khoshérgwí,	Hekhúú,	
Fishingrod,	n. Brokhiánari,	Pishaphóng,	Arhiápúl,	Apo,	Khosési,	Késhibú,	
Five,	a. Páns,	Wá,	Phungo,	Ngá,	Péngú,	Pang,	
Flat,	a. Honán,	Shoniaibi,	Kéklán.	Akáng,	Mézi,	Jéjángménié,	
Flint,	n. Páthor,	Wáiding,	Árlong,	Shiung,	Jipvorú,	Cho,	
Flower,	n. Phúl,	Khúem,	Mir,	Pachá,	Ménipú,	Niéén,	Méng ai
Fly,	v. Ú r,	Pénilang,	Iniornoi,	Langán,	Nhapú,	Giénlotta,	
Fog,	n. Kúnohi,	Kúál,	Inghún,	Anéi,	Proché,	Khiélgési,	
Foot,	n. Bhorí,	Yáká,	Ekéng,	Kakéng,	Kembú,	Phá,	
Forefinger,	n. Bámún angúli,	Yáoshi,	Múnjong,	Kakhútchal,	Phi,	Jongú,	
Forehead,	n. Koppál,	Tháin,	Téhang,	Kadéapang,	Tikha,	Insompú,	
Forest,	n. Káthoni,	Hakra,	Ingráin,	Gánuang,	Si, Nhá,	Téro, héu,	
Forge,	v. Khémákor,	Dákhlaishi,	Pédlónáng,	Élungshianin,	Khasiché,	Kligóttá,	
Forget,	v. Pahor,	Plao,	Tengnedet,	Háitan,	Rékra motá-	Shángósha,	
					ché,		
Formerly,	ad. Táhani, Púrbé,	Shikánghá,	Hakoké,	Kúl,	Kériaki,	Nháka,	
Fort,	n. Kóith,	Khóróng,	Korkébi,	.....	Kúdá,	.....	
Fortify,	v. Konth-mara,	Khóróngká,	Korbuinon,	.....	.....	.....	
	or Gor-dia,						
Forty,	a. Solis, Dúkúri,	Pishágni,	Phili-kép,	Shom-li,	Lhidá,	Hainghé,	Rhédai
Four,	a. Sári,	Mábrí,	Phili,	Lí, Lí,	Dá,	Kéjhe,	ché Médai
Fourteen,	a. Choidho,	Magbri,	Kréphli,	Shomléli,	Kerr-o-dá,	Sánnépéggé-	
Fowl,	n. Kúkúrs,	Daono,	Vo,	Áchá,	Théva,	Térré,	
Friend,	n. Mitá,	Khápíhong,	Edonéráp,	Kájol,	Áso,	Kámé,	
Frog,	n. Béng,	Inbrú,	Chongho,	U-kéng,	Gwirno,	Sággí,	

Front-door, n.	Noséántékra,	Hongthuang- háp,	Kot-pi,	Ki-Khá,	Kákén,
.....		Athé,	Thingá,	Shi,	Térráshá,
Fruit, n. Gúti,	Bokrong,	.....	Ihing,	Thésiéh,	.....
Gall-bladder, n. Pitt,	Pokhlú,	Hánsopi,	Numé,	Kévu,	Gasen,
Ginger, n. E'dá,	Hajing,	Arlúso,	E'pén,	Chi-shi,	Tanienu,
Girl, n. Soáli,	Péhi,	Pinon,	Chétan,	Totá,	Lopinú,
Give, n. Dé,	Ri,	Damaun,	Kélehá,	Tanen,	Gokhé, Gotá,
Go, n. Já,	.....	Vi or Bi,	Páthénlúnjái,	Soná,	Tami,
Goat, n. Ságoli,	Brén,	Arnám,	Soná,	Kévi,	Térogba,
God, n. Iswor, Déo,	Mattai,	Sér,	Áphái,	Tophá-Kedi,	Honúngi,
Gold, n. Hón,	Kacháo,	Méong,	Náchákáng,	Apúcháo,	Gwá,
Good, n. Bhál, Báru,	Hámbeí,	Vopitunga,	Hépu,	Ácháp fú, or	Tophá Kédági,
Goose, n. Rájaph,	Daophlando- háung,	Thú,	Hépi,	Azápvú,	
Grand-father, n. Koká,	Aiú,	Phi,	Kátú,	Nono,	Abáng,
Grand-mother, n. Búri Ai,	Abi,	Iéupo,	Katúnú,	Nokimá,	Athi,
Grand-son, n. Náti,	Chathai,	Iéupi,	Hámpá,	Nhà,	Aninga,
Grand-daughter, n. Nátini,	.....	Tipli,	Kháó,	Tékú,	Aniu-gi,
Grass, n. Gháph,	Sham,	Phélong,	Mikivúná,	Mokhrú,	Lorú,
Grass-hopper, n. Phoring,	Gúing,	Arléng-Kipi- adung,	Alin,	Kédi, Kézá,	Sékhú,
Grave, n. Moidám,	Phéthani,	Kémunpi,	.....	..... Ké- Akéshin,	Témékeshóng,
Great, n. Bor, Dángor,	Debi,	Késhé,	.....	Pezie or Ké- Akéshin,	Kégang,
Great-toe, n. Burá angúli,	Gáshima,	Késhinjok,	.....	pézié,	Ajong pú,
Green, n. Hiám boron,	Kéhráng,	.....	.....	Kérhé,	Ákénjhu,
(colour), n.				Kézi,	Kázi,
Green (raw) n. Képsá,	Kétháng,	Akévé,	Áhing,	Mácháro,	.....
Ground, n. Máti,	Há,	Longlé,	Léshit,		
Gullet, n. Nelú,	Dilam, or Ká- rángthoroh,	.....	.....		

Hammoi

English.	Assamese.	Kachári.	Mikir.	Kúli.	Angámi Nágá.	Béngmá Nágá.	Kutchá Nágá.
Gun,	n. Hiloi,	Hiloi,	Hilé,	Mépóm,	Miasi,	Másápúng,	
Gun-powder,	n. Khái,	[ro. Pakhár,	Phélo,	Mélú,	Bákhar,	Khorri,	
Guts,	n. Nari, or Bhun-	Púbú,	.....	.....	Rieh,	.....	
Hail,	n. Hil,	Kédichai,	Hérré,	Gil,	Prr,	Tégwangácha,	
Hair (of	n. Súli,	Khnai,	Iohú,	Shám,	Tat-thá, Thá,	.....	
man),	n. Nom,	Pékhami,	Angmi,	Ámúl,	Má,	.....	
Hair (of ani-	n. Adhá,	.....	Abéng,	Akékhát,	Téchá,	.....	
Half,	n. khor,	E'do-Kejar,	.....	.....	.....	.....	
Half way,	n. Adhá bát,	Lámá kéjar,	Ajitim,	Akimjáncá,	Chákhwipo,	.....	
Hammer,	n. Hántúri,	Daukabú,	Kibú,	.....	Rékri,	Kéchásén,	
Hand,	n. Háat, [dor,	Yáofá,	Nérri, [ong,	Kékhút,	Bi, or Bhi,	Bén,	
Handsome,	n. Húwoni, Sun-	Meehangbi,	Mésén or Mé-	.....	Ngú-vi,	Kágwá,	
Hawk,	n. Hén,	Daolinghá-	Vomú,	.....	Múvino,	.....	
He,	pro. Hi,	khri,	Báng,	Hipá,	Po,	Higá,	
Head,	n. Múr,	Bo or Po,	Ninhú,	Kálúcháng,	Táú,	Apí,	
Headache,	n. Múor bikh,	Khro sháda,	Niphúsodé,	.....	.....	.....	
Hear,	n. Hún,	Khána,	Arjünon,	Ngaitan,	Rénisé,	.....	
Heart,	n. Kolédil,	Laikhúnthái,	Avibong,	Kálúngchang,	Mélú,	Akísá,	
Heavy,	n. Godhúr, Bhári,	Rishibi,	Ardigúng,	Agriá-shi,	Meswi,	Néuri,	
Heel,	n. Górá,	Yashintho,	Kéngti,	Kakhú-tárum	Phitso,	Phájha,	
Héir,	n. Wáris, Porái,	Hajirjáthá,	Paténg,	.....	.....	.....	
Help,	n. Upokár kor,	Khánárlha,	Hangdamún,	.....	.....	.....	
Hen,	n. Máiki kúkúra,	Déomá,	Voápí,	A-ánúng,	Vokri,	.....	

Here,	<i>ad.</i> Iyát,	E ráhá,	Ládák,	Hékúm,	Háki,	Héká,	Áká
Hide,	<i>v.</i> Lúkúá,	Thém,	Tonnún,	Shéftan,	K éválé,	.....	
Hill,	<i>n.</i> Thápoliká,	Héja,	Inglóng,	Múlahang,	Kizikhrú,	Ringcho,	
Hip,	<i>n.</i> Dhapóliká,	Chéngkhóng,	Vam,	Kákhérbá,	Ligé,	.....	
Hoe,	<i>n.</i> Kúr, Kodál,	Khúdi,	Kú,	Túché,	Kéjá,	Khódróng,	
Hog,	<i>n.</i> Gáhorí,	Khojala,	Phakálo,	Vochá,	Vokrr,	téópécha,	
Hold,	<i>v.</i> Dhor,	Rém,	Népnún,	Mántan,	Téléché,	Ténglogotta,	
Honey,	<i>n.</i> Mójl,	Pérdi,	Aláng,	Hojjú,	Mékhwitza,	Khadi,	
Hoof,	<i>n.</i> Khuprá,	Yáohúr,	Ákengchémi,	Atín,	Mú,	.....	
Horn,	<i>n.</i> Hing,	Pókróng,	Anú,	Aki,	Ká,	.....	
Horse,	<i>n.</i> Choprá,	Korai,	Lúsái,	Sakor,	Kwirr,	Kétrú,	
Hot,	<i>n.</i> Topot, Gorom,	Dóngbi,	Károm,	Asá,	Lé,	.....	
House,	<i>n.</i> Ghor,	Noh,	Hém,	In,	Ki,	Ká,	
How?	<i>ad.</i> Kénétoi,	Pédilai,	Kolopúson,	Iñám,	Kidi,	.....	Daichú
How much?	<i>ad.</i> Kémán,	Bichlai,	Kolón,	Ijátham,	Kéziki,	.....	Kihégá
How many?	<i>n.</i> Káivá,	Máishi,	Koán,	Ijátnam,	Kichúró,	.....	
Hundred,	<i>n.</i> Háu,	Rájáshi,	Phérró,	Já,	Krá,	Ché,	Hai
Hunger,	<i>n.</i> Bhúk,	Hohhríbi,	Kángchir,	Kagilákilé,	Mérr,	Gingéndé,	I
I,	<i>pro.</i> Moi,	Ang,	Né,	Kéi,	Á,	Kénanin,	
Idiot,	<i>n.</i> Págol,	Kébir,	Inchám,	Mingol,	Kélého,	Ringogetanú,	Héjéo
Idle,	<i>n.</i> Eléhúá,	Shlébi,	Kasélét,	Mitháiong,	Mechi,	Tag,	
Iron,	<i>n.</i> Ló,	Shér,	Unchin,	Thi,	Thégé,	.....	
Ivory,	<i>n.</i> Hánti dánt,	Méung-ha-thai,	Ingnaráso,	Sáuphá,	Chúhú,	.....	
Jackal,	<i>n.</i> Hiyál,	Méahrong,	Hijai or Jót-sat,	.....	.....	.....	
Jaw,	<i>n.</i> Thotorá,	Káshká,	Kéchéng,	Káktálhang,	Mékwá,	Shophá,	
Join,	<i>v.</i> Joróá,	Khájú,	Inthúnón,	Chontan,	Méthúshé,	.....	
Jump,	<i>v.</i> Jápnmár,	Piriphléi,	Choupiugnún,	Chontan,	Prúsieché,	.....	
Jungle-fowl	<i>n.</i> Bon-kúkúra,	Dau missér,	Vohur,	Á-ápá,	Vopurr,	Grénpoh,	

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angámi Nágá.	Réngmá Nágá.	Kutchá Nágá.
<i>a.</i> Jungle,	<i>a.</i> Jongol, Hábi,	Hágrá,	Ingnám,	Gamlá,	Nhá,	.....	
<i>v.</i> Keep,	<i>v.</i> Rakh,	Mháó,	Pédónáng,	Néngatan,	Pévéléché,	Khénottá,	
<i>v.</i> Kick,	<i>v.</i> Lathimár,	Jiuphá,	Túrphít,	Chúntan,	Phitchá-potché,	Nahishítá,	
<i>a.</i> Kid,	<i>a.</i> Sagolir Poáli,	Brinaba, [thái,	Béaso,	Kélnou,	.....	.....	
<i>a.</i> Kinney,	<i>a.</i> Ghilá,	Thárap, Mi-	Hámbi,	.....	Mécha,	.....	
<i>v.</i> Kill,	<i>v.</i> Mar, Bodhkor,	Shúthai,	Ptáinún,	Thát-tan,	Dúkhrléché,	.....	
<i>a.</i> Kilt,	<i>a.</i> Mékhlá,	Rigú,	Pini,	Ni,	Ni,	.....	
<i>a.</i> Kind,	<i>a.</i> Moron,	Kasháo,	Kanghou,	Alínáhi,	Mezié,	.....	
<i>a.</i> King,	<i>a.</i> Rojá,	Rája,	Récho,	Háosá,	Kédímá,	.....	
<i>a.</i> Knee,	<i>a.</i> Anthú,	Yáshgú,	Kéngphú,	Kákhúbú,	Khútzá,	.....	
<i>a.</i> Gánthi,	<i>a.</i> Gánthi,	Khát-ho,	Kéthít, [ká,	Akikhítboh,	Pélé,	Kho,	
<i>a.</i> Angulirgántli,	<i>a.</i> Angulirgántli,	Yáoyén,	Rechimúnási-	Kakhútschéng,	Bikhr,	Abél,	
<i>a.</i> Jokhlá,	<i>a.</i> Jokhlá,	Yaokhléng, or	Don-don,	Léi,	Khéá,	Jonghú,	
<i>a.</i> Khorá,	<i>a.</i> Khorá,	Yathomai,	Kátékok,	Kéngbai,	Réhié,	Shongphá,	
<i>a.</i> Máts, Bhakhá	<i>a.</i> Máts, Bhakhá	Kérokhabá,	Lámakhésák,	Kapáo,	Khwé,	Nphágwágé-	
<i>a.</i> Pat,	<i>a.</i> Pat,	Plúái,	Arvo,	Ná,	Nié,	mú,	
<i>a.</i> Sál, Sámoré,	<i>a.</i> Sál, Sámoré,	Bokúr,	Arréng,	Sáwún,	Chiza,	Jongni,	
<i>a.</i> T-héng,	<i>a.</i> T-héng,	Yágá,	Kéng,	Kékéng,	Phi,	Agí,	
<i>a.</i> Némú-téngá,	<i>a.</i> Némú-téngá,	Tháisháyán-shúgar,	Théso	.....	.....	Phá,	
<i>a.</i> Dighol,	<i>a.</i> Dighol,	Káláo,	Ajon,	Adúng,	Kéchá,	Tháshúshá,	
<i>a.</i> Náhor-phúté-	<i>a.</i> Náhor-phúté-	Místhatre,	Kéthoi,	Ajé,	Tékhu-khútti,	Asháng,	
<i>a.</i> ká Bég,	<i>a.</i> ká Bég,					Mamo,	Kaoti

Lick,	<i>v.</i> Séléká,	Spáo,	Kangléknún,	Aléetan,	Méiéché,	Juta,
Lightning,	<i>n.</i> Bijúí,	Shráp,	Chéfúrkéang,	Ké,	Ngúkhwe,	.....
Lip,	<i>n.</i> Onth,	Khújar,	Túr,	Kánél,	Sho,	Méngsi,
Listen,	<i>v.</i> Hún,	Kháóló,	Arjunon,	Ngáitan,	Zú,	.....
Little,	<i>a.</i> Horú, Olop,	Kháébi,	Kébi,	Anéo,	Kechi, Chi,	Késhén,
Little-finger,	<i>n.</i> Kéyá angúli, Yaoshisha,		Múnso,	.....	Bichono-ré	Jonguántén-
Liver,	<i>n.</i> Agmongoh,	Páká,	.....	.....	khócho,	ga,
Long,	<i>a.</i> Dighol,	Khaláo,	Keding,	Asháo,	Seh,	..... [nin,
Lunga,	<i>n.</i> Haon-phao or Ukha-ghor,	Poshroh,	.....	.....	Phié,	Kotojoninahé-
Man,	<i>n.</i> Mánúh, Pú-rúh,	Pú-Shibúng,	Arléng,	Mihim,	Thépvomá, or	Tamé or Pe-Umpémi
Mangoe (fruit),	<i>n.</i> Ám,	Thajú,	Thárvé-athé,	Haithé,	Themmá,	choniú,
Meat,	<i>n.</i> Mongoh,	Mokong,	Ok,	Sá,	Merrosi,	.....
Medicine,	<i>n.</i> Dorob, Darú,	Múli,	Bábámúng,	Lou,	Themnio,	Tha,
Mend,	<i>v.</i> Botá,	Shúkba,	Kanghon,	.....	Phréléché,	Méi,
Middle,	<i>n.</i> Maj,	Kéjar,	Angbong,	Akinjang,	Métso,	Raté,
Midnight,	<i>n.</i> Honyájb,	Hokéjar,	Yérló,	Jánkháng,	Tilloki,	Alénin,
Milk,	<i>n.</i> Gákhir,	Abúdi,	Amokláng,	Silatnoitú,	Núdrú,	Hópénso,
Monkey,	<i>n.</i> Bando,	Mákhúsa,	Tévo,	Jong,	Tékwi,	Niéde,
Month,	<i>n.</i> Máh,	Tain,	Chiklo,	Lhá,	Khrr,	Thékú, Tégu,
Moon,	<i>n.</i> Jún,	Tain,	Chiklo, or Chiklolongpi,	Lhá,	Krr or Khrr,	Sharmé,
Mosquito,	<i>n.</i> Moh,	Thámphi,	Chitún,	.....	Krr,	Chakágong,
Mother,	<i>n.</i> Ai, Mátri,	Mamá,	Pé,	Anú, Hénú,	Virú,	Tékhú,
Mountain,	<i>n.</i> Porbot,	Haju,	Inglong,	Molschang,	Azo,	Ázo,
Mound,	<i>n.</i> Háphú,	Háphlo,	Téplong,	Lhimlóng,	Kiji-Khrú or Réncho,	Sájé-Khrú,
Mouse,	<i>n.</i> Nigoni,	Mécho,	Gokingsho,	Júché,	Répú,	Umpiong,
Mouth,	<i>n.</i> Múkh,	Kho,	Ho,	Kámú,	Zúché,	Tépú,
					Tá,	Mángkhong,

English.	Assamese.	Kacháři.	Mikir.	Kúki.	Angami Nágá.	Réngmá Nágá.	Kutobhá Nágá.
Mud,	<i>n.</i> Boká,	Hádebu,	Inghán,	Abang,	Kia,	.....	Ké
Muakét,	<i>n.</i> Hiloi,	Hiloi,	Hilé,	Mépúm,	Missi,	Másápíng,	
Moustaches,	<i>n.</i> Gonph,	Khámphor,	Ingmúm,	Khámú,	Támá,	Ménghá,	
Nail (finger),	<i>n.</i> Nokh,	Shérshú,	Asésélt,	Tín,	Bitsé,	Dáchén,	
Naked,	<i>n.</i> Nángtá,	Lángthá,	Aréngángsi,	Akongnái,	Métho,	Niákémo,	
Navel,	<i>n.</i> Nái,	Hotmai,	.....	..... [kom,	Loh,	.....	
Near,	<i>prep.</i> Osorot,	Sámphábi,	Tébokehét,	Náichá,	Ké-Képnoki,	Núnan,	
Neck,	<i>n.</i> Dingi,	Koto,	Chithok,	Kangong- chang,	Vo or Voo,	Ghúndá,	
Needle,	<i>n.</i> Béji,	Shimi,	Ingrim,	Héu,	Thépré,	Pén,	
Nephew,	<i>n.</i> Bhátjá,	Lúra,	Nékoraso,	.....	No or Sazeono,	Asénganiu,	
Nest, (bird),	<i>n.</i> Báh,	Páthib,	Atár,	Abú,	Pérrá-krú,	Aché,	
Net,	<i>n.</i> Jál, Phánd,	Ché,	Lán,	Lén,	Zú,	Jhó,	
New,	<i>n.</i> Notún,	Katáin,	Kémi,	Athá,	Késsá,	Késé,	
Niece,	<i>n.</i> Bháginí,	Bishá,	Koráso,	.....	Mé,	Asénganiu,	
Night,	<i>n.</i> Ráti,	Hór,	Ajio,	Ján,	Tzi,	Chéngarzén,	
Nine,	<i>n.</i> Náú,	Shiko,	Sirkép,	Kó,	Thékú,	Tákka,	Tingmúi
Nineteen,	<i>n.</i> Unois,	Maishigú,	Kréinkap,	Shom-lé-kó,	Mekupomo- thékú,	Kemmélo- sháiki,	Hékowi
Ninety,	<i>n.</i> Nowoi, Noboi,	Bishá brithogi,	Throk sirkép,	Shom-kó,	Lui-thekú,	Háin-takká,	Rhé-hékowi
No,	<i>ad.</i> Nái, Noboi,	Niá,	Káli,	Aompoi,	Mó,	Múlé,	La
Nose,	<i>n.</i> Nák,	Nók,	Nokán,	Nákú,	Nhitchá,	Hikong,	
Now,	<i>ad.</i> Etya,	Duha,	Non,	Tún,	Ché-Tsé,	Ncho,	
Oil,	<i>n.</i> Tél,	Tháo,	Yángthú,	Shatháo,	Gakridzú,	Léchéudi,	
Old,	<i>n.</i> Búré, Púroni,	Karásá,	Késsor,	Tésché, Alú,	Kétsá,	Kéthén,	
Once,	<i>ad.</i> Ebeli, Ebár,	Alángshi,	Ipúr,	Khátré,	.....	Gwéngwó,	
One,	<i>n.</i> Ek, Etá,	Mási,	Lai,	Khat,	Po,	Kammé,	



Onion,	n. Pías, [léugá,	Shámphráng,	Arsún,	Lothútál,	Khové,	Shongín,	
Orange,	n. Húmhírá-	Héndrá,	Homthirá,	Shamátáláí,	Chiffé,	Homthirá,	
Orphan,	n. Mátrá,	Pomághéthé,	Yánggré,	..... [lip,	Méromomá,	Teghomú,	
Owl,	n. Phéngsá,	Dáokhú,	Voinghú,	Chimbúeháng-	Rékhró,	Khéngsán,	
Pain,	n. Bikh,	Shábsá,	Késo,	Anáí,	Chi,	Riévenion,	
Peacock,	n. Moirá,	Dáutái,	Vóram,	To-oiái,	Rádí,	Gétiá,	
Pig,	n. Gáhúri,	Hono,	Phák,	Vo-áchá,	Thévo-(Wild pig, Méngi),	Tébo-(Wild pig, Ní),	Habbák-(wild-pig, U'nkia)
Pigeon,	n. Paró,	Dáophri,	Vothúng,	Vápár,	Topér,	Topri,	
Plantain	n. Kol-gos,	Tháilúpháng,	Phéngúá-pháng,	Náchang,	Tekwé-Si,	Tháiábén,	
(Tree),	n.						
Poison,	n. Bih,	Rú,	Bí,	Thalgú,	Théri,	Méi,	
Poor,	n. Dúkhíyá,	Dúkhíá,	Kédútk,	Vaicha,	Mhéji,	Téghoinin,	
Porcupine,	n. Kotla-pohú,	Médei,	Yohibong,	Sákú,	Sékrú,	Unchong-	
Potato,	n. Alú,	Thátái,	Phérúathé,	Há,	Réphé,	Kénhashá,	
Pull,	v. Tán,	Sháin,	Vongnong,	Loitan,	Téahile,	Shilogottá,	
Push,	v. Thélidé,	Né,	Doinún,	Shontau,	Néshi,	Jhenta,	
Raft,	n. Már,	Rúngmár,	Phán,	Póm,	.....	Pian,	
Rafter,	n. Rúá,	Phérái,	Yárbop,	Vákhai,	Kárhong,	.....	
Rain,	n. Borokhún,	Hádi,	Arvé,	Go,	Tir,	Chinathra,	
Rat,	n. Endúr,	Moshi,	Júpi,	Júnam,	Thézú,	Tapd,	
Raw,	n. Kéngsá,	Kétháng,	Akévé,	Ahing,	Kérhi,	Tégi,	
Red,	a. Rongá, Láí,	Kajáo,	Aké-ér,	Ásan,	Keméri,	Keháng,	
Rest,	v. Jirá,	Léngboba,	Sángnún,	Kingátan,	Rélité,	Chongtá,	
Return,	v. Ubhoi áh,	Phoiniphai,	Chivoinún,	Honkitan,	Iákerlé,	Vochiniurottá,	
Rhinoceros,	n. Gopr,	Koná,	Kindú,	Gondá,	Kwédá,	Kwédá	
Rib,	n. Kámi-har,	Sangkhréng,	An, .....	Bú,	Tié,	Túy,	
Rice	n. Bhát,	Makhám,			Té,	.....	
(cooked),	n.	Máirong,	Sáng,	Chángchang,	Chiko,	Cheko,	
Rice (un-cooked),	n.						

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angámi Nágá.	Réngmá Nágá.	Kutchá Nágá.
Rich,	<i>a.</i> Sohoki, Dhoni,	Kanáng,	Kiri, Keplang,	Ahává,	Méhi,	Kegwanu,	
Ring,	<i>a.</i> Angothi,	Yáodám,	Arnán,	Khotjém,	Kékhá,	Béghi,	
Ripe,	<i>a.</i> Poké,	Kémén,	Kémén,	Amit-ai,	Mé	Kémén,	
River,	<i>a.</i> Núi, Nodi,	Dikhong,	Langroupi,	Vádúng,	Kér,	Dikéngong,	
Road,	<i>a.</i> Bút, Ali,	Lámá,	Továr,	Lámpi,	Chá or Shá,	Cháng,	
Root,	<i>a.</i> Hipá, Gúri,	Popháng,	Aukúr,	Thingbal,	Mi,	Rongmá,	
Rope,	<i>a.</i> Jori,	Dúshá,	Ári,	Khá,	Kerré,	Rong,	
Rotten,	<i>a.</i> Posá, Gélá,	Sháokhá,	Thúok,	Amon,	Títia,	Réngosho,	
Rupee,	<i>a.</i> Toká, Rúp,	Rang,	Rúp,	Shúmhéng,	Ráká,	Tébipong,	
Salt,	<i>a.</i> Lón,	Shém,	Intí,	Chi,	Métsá,	Ché,	
Same,	<i>a.</i> Eké,	Ebúno,	Chingbarehit,	Gotkhat,	Kémhá,	Kégwénto,	
Sand,	<i>a.</i> Bál,	Háchén,	Sangti,	Pinél,	Hochá,	Hácháng,	
Sap,	<i>a.</i> Roh,	Didongwá,	Théngpéan	Ánsai,	Sidzú,	Shinkong-	
Save,	<i>a.</i> Udhákor,	Máthángbá,	kokarláng,	.....	Pévélé,	nindi,	
Say,	<i>a.</i> Koh, Bol,	Thi,	Jokhotlonone-	.....	Pulé,	Théwékhí-	
Scratch,	<i>a.</i> Ánsorá	Púrúpá,	phong,	Sétan,	Chogotía,	losho,	
See,	<i>a.</i> Sá, Dékh,	Nái,	Káchéphú,	Khot-tan,	Nkímé,	Phita,	
Seize,	<i>a.</i> Dhor,	Rém,	Lángún,	Vétan,	Pisché,	Ténótá,	
Seven,	<i>a.</i> Hát,	Máshni,	Népnún,	Mánnin,	Téléché,	Sén,	Héná
Seventy,	<i>a.</i> Hotor,	Pishákéthám-	Throksi,	Ságt,	Lhi théná,	Hain-sini,	Rhé-hená
		thúji,	Throksi-kép,	Shom-ságt,			
Seventeen,	<i>a.</i> Hotéro,	Thojishní,	Kréthrokxi,	Shom-lé sagi,	Mekú-pomo-	Unkipénu-	
Shade,	<i>a.</i> Sáníá, Sán,	Shainkhim,	Abin,	Alim,	théná,	seni,	
Shallow,	<i>a.</i> Torang,	Pábi,	Lángákángde,	.....	Tisú,	Asa,	
				.....	.....	Dikshem,	

Shame, Share,	<i>n.</i> Láj, <i>v.</i> Bontá, kor,	Légikhá, Báthá-khlai,	Thrágdúk, Thágnún,	Ajá, áchai, Homin,	Méngá, Kézáléché,	Kéjómáré, Kéngé- gotta, Sérralogotta,
Sharpen,	<i>v.</i> Dhoróá, Soká- kor,	Pobi,	Arsúnón,	Nolhimin,	Kérsiché,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Shave, Shield,	<i>v.</i> Khurúá, <i>n.</i> Phor, Dhál, Súnti, Khatá,	Shin, Phi, Heibi,	Soinún, Chong, Ajongathi,	Votan, Lúmbong, Áchom,	Thésiché, Pézhi, Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Shoulder,	<i>n.</i> Kán, Kandh,	Pháophrong,	Pháng,	Kalinkó, Nágátongin,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Shut,	<i>v.</i> Bondh kor,	Phunghá,	Kángáp,	Áná,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sick,	<i>a.</i> Morá,	Lémdhé,	Késo,	Áná,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Silver,	<i>n.</i> Rúp,	Sháthi,	Rúp,	Shúmdchéng,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sing,	<i>v.</i> Gánkór,	Réjáp,	Lúnglún,	Lásan,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sister,	<i>n.</i> Bhoni, [kái,	Bhándaó,	Níngjirpi,	Shúmdchéng,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sister-in-law,	<i>n.</i> Jéháhu Khúl- Púai	Púai	Korpi,	Kánaomi,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sit,	<i>v.</i> Boh,	Khám,	Nínón,	Tovin,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Six,	<i>a.</i> Soi,	Máto,	Thrók,	Gúp,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sixteen,	<i>a.</i> Holo,	Majito,	Kréthrok,	Shom-lé-gúp,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sixty,	<i>a.</i> Háthi,	Bishágothám,	Throk-ké,	Shongrúp,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Skin,	<i>n.</i> Sal,	Púgur,	.....	Jih,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sky,	<i>n.</i> Ákáh,	Nákasháo,	Sinéng,	.....	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sleep,	<i>v.</i> Hó, Toponijá,	Thúda dong,	Inot,	Vánchúng,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Slowly,	<i>ad.</i> Dhíré-dhíré,	Khéré-khére,	Péiu-péiu,	Lúmtan, Olcháchan,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Sly,	<i>a.</i> Téngor,	Láthúa,	Kérré,	Achingthé,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Small,	<i>a.</i> Horú,	Kháshibi,	Bihék,	Anéó,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Smell,	<i>v.</i> Húngá,	Márrámbéi,	Angnindo,	Nátan,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Snake,	<i>n.</i> Háp,	Jibú,	Phirúi,	Gól,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
So,	<i>ad.</i> Ené, Téné,	E'dnú,	Lápú,	Hiti,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,
Son,	<i>n.</i> Putro, Puték,	Anshá,	So,	Kachápá,	Kézza, Búkhé, Kévasiché, Mháchí, Rákajé, Chellsiché, Alápro,	Thégottá, Ki, Kéddi, Abé, Dwánogotta, Rú-gwámó, ..... Léthéta, Aléki, Amó, Bhéintá, Sérró, Unkipémo- Sérró, Hain-Sérró, ..... Chém, Jibéinkhé, Gwén-gwén,

Hanói  
Achú

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angámi Nágá.	RéngmáNágá.	Kutchá Nágá.
Sour,	<i>a.</i> Téngá,	Mékhrí,	Hánthor,	Théthú,	Khié,	Késsáng,	
Sow,	<i>n.</i> Maiki gáhoi,	Homá,	Phákápi,	Vo-ánú,	Vokrr,	Tébohpú,	
Span,	<i>n.</i> Bégot,	Khujlá,	Ichák,	Kháp,	.....	Nka,	
Spear,	<i>n.</i> Jathi,	Chong,	Chir,	Téngchá,	Réngú,	Méi,	
Spider,	<i>n.</i> Mokorá,	Péma, [laibá,	Sangman,	Máimom,	Siré,	Kátúroh,	
Spit,	<i>v.</i> Thúi-péolá,	Khúdi-thúk-	Kángthoknú,	Neehipaitan,	Métsáchiché,	.....	
Spleen,	<i>n.</i> Jorkhapori,	Pem, or Bothla,	.....	.....	Nútú,	.....	
Square,	<i>a.</i> Sári súkiyá,	Korombri,	Konáphili,	Ningli,	Pokádá,	IPéj-je,	
Stab,	<i>v.</i> Khous,	Yéba,	Kétok,	Súntan,	Pézachi,	Chémá,	
Star,	<i>n.</i> Torá,	Hathrái,	Chiklo-longso,	A-ási,	Thémú,	Chama,	
Steal,	<i>v.</i> Súr kor,	Khaúba,	Kéchonghú,	Gútan,	Régúléché,	Kérrahé,	
Steam,	<i>n.</i> Bháp,	Kohúdi,	Angúi,	Tikhú,	Dzú melloh,	Akénnú,	
Stick,	<i>n.</i> Bári, Láthi,	Yájemú,	Chin,	Tingol,	Kéthé,	Than,	
Stone,	<i>n.</i> Hil,	Longthai,	Arlong,	Shong,	Kétehé,	Cho,	
Stomach,	<i>n.</i> Pét,	Hoh, or Búbúí- ong,	Pok,	Kaol,	Vadi, Váká,	King,	
Straight,	<i>a.</i> Pón,	Pélléngbi,	Kékéng, Kengsih,	Ajángké,	Mézi,	Jjji,	
Stream,	<i>n.</i> Ján, Júri,	Dishá,	Lángso,	Tidung, Vá- dung,	Kérr,	Dirikéssé,	
Strength,	<i>n.</i> Bol, Hokti,	Bol,	Yakong,	Ahat,	Káméti,	Arénia,	
Strike,	<i>v.</i> Már,	Súhá,	Chongnú,	Votán,	Vosiché,	Bvútá,	
Suck,	<i>v.</i> Sohá, Hohá,	Sopá,	Kángsip,	Chéptan,	Kéllákléché,	Chéntá,	
Sun,	<i>n.</i> Béli,	Sain,	Arni,	Nisá,	Naki,	Héka,	
Swear,	<i>v.</i> Hopotkhá [dé,	Sémáidáonbá,	Sémátángnú,	Keháchélin,	Réswéléché,	Chwéngottá,	
Sweep,	<i>v.</i> Honré, Jharú-	Hasipkhái,	Karkok,	Théin,	Khowáleché,	Khogottá,	
Sweet,	<i>a.</i> Hoád, Mithá,	Kéddi, Dibí,	Kédok,	Alhóm,	Kémú,	Néni,	

	<i>n. Négúr, or Nez,</i>	<i>Permái, Khernai,</i>	<i>or</i>	<i>Armé,</i>	<i>Améi,</i>	<i>Mi,</i>	<i>Amá,</i>	
Tail,	<i>n. Loh,</i>	Lang,	Ponún,	Lán, Látan,	Léléché,	Léché,	Khilórottá,	
Take,	<i>a. Utko,</i>	Chobá,	Kángtoi,	Ásángpi,	Rékré,	Rékré,	Táchosáng,	
Tall,	<i>v. Pholá,</i>	Chukhá,	Ségnún,	Loítan,	Kínásiché,	Kínásiché,	Shirhénghtot-tá,	
Tear,								Kérré
Ten,	<i>a. Doh,</i>	Tháuji,	Kép,	Shom,	Kerr,	Kerr,	Sérráh,	
Testicle,	<i>n. Phol-guti,</i>	Lidsodi,	.....	Hitého,	Dza,	Dza,	.....	
They,	<i>pro. Hihont,</i>	Hibi-Poshi,	Látúm,	Hiacho,	Lú,	Lú,	Hidén,	
That,	<i>a. Ho, Hoto,</i>	Obo,	Hálá,	Hiténg,	Tsé,	Tsé,	Li,	
Then,	<i>ad. Tétiyá,</i>	Dánanghá,	Mú,	Héachún,	Chinú,	Chinú,	Nchángki,	
There,	<i>ad. Tété,</i>	Horáha,	Yáládá,	Asábébu,	Méloh,	Méloh,	Lúki,	
Thick,	<i>a. Dáth,</i>	Réjabi,	Kárhát,	Gúchá,	Kérégúma,	Kérégúma,	Sémépan,	
Thief,	<i>n. Sór,</i>	Mhkao,	Chonghú,	Apácidé,	Repvo,	Repvo,	Kéréhénú,	
Thin,	<i>a. Pátol,</i>	Pábi,	Kángar,	Héché,	Hao,	Hao,	Répúbén,	
This,	<i>pro. Ei Ekto,</i>	Ebo,	Lá,	Héché,	Sérr,	Sérr,	Hi,	
Thirty,	<i>a. Tria,</i>	Bishasi-maji,	Thomké,	Shom-thúm,	Shánré,	Shánré,	Shánré,	
Thirst,	<i>n. Piyáh,</i>	Shámfráng,	Arsún,	Kádangáchá,	Songni,	Songni,	Songni,	
Thorn,	<i>n. Kaint,</i>	Shú,	Insú,	Ling,	Sáha,	Sáha,	Sáha,	
Thou,	<i>pro. Toi,</i>	Núng,	Náng,	Náng,	Né,	Né,	Né,	Náng
Thousand,	<i>a. Héjár,</i>	Rijnchi,	Súri,	Já-shom,	Nié,	Nié,	Shám,	Né
Three,	<i>a. Tni,</i>	Kéthám,	Kéthom,	Thúm,	Sé,	Sé,	Késhán,	Késhúm
Throw,	<i>v. Pélá,</i>	Khébibá,	Pédátún,	Páitan,	Péisiché,	Péisiché,	Phéngottá,	
Thunder,	<i>n. Gorjon,</i>	Nokhásoág-rémá,	Siningtáng-ring,	Vángúngé,	Prthé,	Prthé,	Chingashén,	
Thus,	<i>ad. Ténékoi,</i>	Ei'elái,	Lápu,	Hithúchú,	Hidi,	Hidi,	Jong,	Achú
Tie,	<i>v. Bondhá,</i>	Khá,	Ráknoi,	Kántan,	Pháléché,	Pháléché,	Phén',	Herrakedi
Tiger,	<i>n. Béntásorábág,</i>	Raikhon,	Télé,	Ájé,	Tékhú,	Tékhú,	Témá,	Nái
To-day,	<i>ad. Aji,</i>	Tinni,	Pinni,	Túnin,	Thá,	Thá,	Nthé,	
Toe,	<i>n. Bhorir angúli,</i>	Yáshishá,	Kéngchimún,	Kákéng jún,	Phichino,	Phichino,	Ajongro,	

English.	Assamese.	Kachári.	Mikir.	Kúki.	Angámi Nágá.	Réngmá Nágá.	Kutchá Nágá.
To-morrow, <i>ad.</i>	Káli,	Dákhná,	Pénnáp,	Jinglé,	Sodú,	Séndú,	Chonai
Tongue, <i>n.</i>	Jibá,	Sáíai,	Dé,	Káíéí,	Mélla,	r	
Tooth, <i>n.</i>	Dánt,	Háthái,	So,	Káíh,	Hú,	Háh,	
Torch, <i>n.</i>	Ariyá,	Wainchéng,	Théngthom,	Méséí,	Mítú,	Máná,	
Touch, <i>v.</i>	Sós, Hát-dé,	Káding,	Otnún, [pi,	Thámtan,	Bésiché,	Hollottá,	
Tree, <i>n.</i>	Gos,	Wongphang,	Arong, Theng-	Shing,	Si,	Sén,	
Tribe, <i>n.</i>	Khéí, jáí,	Shéngfong,	Akur,	Kahi,	Thino,	.....	
Truth, <i>n.</i>	Honsá,	Kébéí,	Yásamét,	Tá-ábe,	Kétho,	Késan, [sha,	
Twelve, <i>a.</i>	Báro,	Máí-jini,	Kré-hini,	Shom-lé-ni,	Kérr-o-kéná,	Serrah-kéhiun-	Kérré-kéná
Twenty, <i>a.</i>	E'kkuri, Bis,	Bishási,	N'koi,	Shom-ni,	Mékú,	Nki,	Nkai
Two, <i>n.</i>	Dui,	Gni,	Hini,	Ni,	Kénna,	Kénhiun,	Kénna
Unbind, <i>v.</i>	Méí, Khól,	Khrú,	Pioknún,	Lhámtan,	Phishiché,	T'ingottá,	
Uncle (Fa-ther's side) <i>n.</i>	Dodái,	Adi,	Ponú,	Héppangá,	Né,	Anio,	
Uncle (Mo-ther's side) <i>n.</i>	Momái,	Maoshi,	Pinú,	Hénungá,	Amúí,	Ajhá,	
Unite, <i>v.</i>	Mil-kor, [sá,	Jorájú,	Kangthún,	Kihotavin,	Kéméthúsi-	.....	
Unripe, <i>a.</i>	Nopoká, Kén,	Kéthang,	Akévé,	Aminato,	ché,	Miémo,	
Vegetable, <i>n.</i>	Hák,	Shámlái,	Hán,	Mé,	Mémo,	Hén,	
Village, <i>n.</i>	Gaon,	Nolai,	Rongso,	Kho,	Ghá,	Phén,	
Warm, <i>a.</i>	K thumiya,	Tungbé,	Párom,	Ásá,	Rénna,	Kéiyéng,	
Warm, <i>v.</i>	Goromkor,	Tungbékh-laihá,	Páromnún,	Olúmtan,	Lé,	Thikéiyéng,	
Wash, <i>v.</i>	Dhoá,	Shú,	Késhoknún,	Shoptan,	Péleleché,	Káthú,	
Water, <i>n.</i>	Jol, Pani,	Dí,	Láng,	Tui,	Késhúché,	Dí,	
Wax, <i>n.</i>	Mom, mo-hitá,	Péreshláí,	Júir,	Khoilú,	Mékhwi,	Khúchién,	



*Vocabulary of the Banpará Nágás.—By S. E. PEAL, Esq., Sibságar, Asám.*

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In the following vocabulary á represents the *a* in *bar*; â stands for *au* as in *naught*; ai, as in *aïle*; au, as in *loud*; e, as *ei* in *eight*; ê, as in *hen*; i, as in *hill*; î, as *ee* in *heel*; ó, as the *o* in *not*; o, as in *note*; u, as in *full*, and ú as *oo* in *fool*.

Abdomen,	vók.	Bait,	púsên.
Able,	túák.	Bamboo,	nyad.
Above,	dinko.	Bank,	shwak túm.
Ache,	kak (kuk).	Banyan-tree,	ngau, mú.
Acid,	mák.	Barn,	púng.
Across,	áròm.	Bark,	pan kan.
Acute,	jún.	Base,	hâtáng.
Adder,	pú.	Basket,	shók shá.
Adze,	vá.	Bat,	âpák.
Afraid,	râ.	"	pák pí.
After,	pai tú.	Battle,	ran, rón.
Aged,	arúpá.	Bead,	lík.
Air,	vin.	Beam,	páng láng.
Alive,	áráng.	Bean,	piá sâ.
Alike,	táve.	Bear,	tchap, chup.
All,	pang ve.	Beard,	mun pú.
Amber,	násâ.	Beat,	pít.
Among,	hótán.	Bee,	nánai.
Ancestor,	âpú.	Beetle,	tchóng.
Angel,	háráng.	Before,	tât le.
Animal,	mai, <i>lit.</i> flesh.	Bell,	linglo.
Ankle,	tchi ding.	Bellows,	zétpú.
Ant,	tzik tzá.	Belly,	vák.
Antelope,	mai kí.	Below,	hâpáng.
Ape,	saákáng.	Belt,	rú pák.
Arm,	tzak or chuk.	Bench,	líá.
Armadillo,	ha bí.	Bent,	kúm.
Arrow,	sán.	Best,	hánkú.
Ashes,	lábú.	Betel-nut,	kovai.
Astray,	sam.	Between,	hâtáng.
Atmosphere,	rang.	Big,	chóng.
Awl,	jan mat.	Bird,	â.
Away,	pau tú, pau ha.	Bird-cage,	shóksâ.
Axe,	vá.	Bitter,	kâ.
" (dao),	chang, tchang.	Black,	nu nak.
Babe,	násím.	Blacksmith,	cháng lík.
Back,	tâkí.	Blanket,	ní.
Bad,	man me.	To bleed,	adzí le,
Badger,	ran vak.	Blind,	dók.
Bag,	nitzúng.	Blindness,	mík dók la.



Blood,	adzí.	Cave,	ha kon.
Blossom,	púá.	Centipede,	pú soi.
Blue,	nak cha.	Charcoal,	mák.
Boar,	vák la, mai la.	Cheap,	ná.
Boil,	tá.	Cheek, <i>n.</i>	navèm, bomzróng.
Bone,	rzán, orzán.	Chest,	khá tók. [bird]
Bone,	hórá, rá.	Chicken,	â sa ( <i>lit.</i> young)
Bough,	panchak.	Chief,	vang hum, vangsa.
Bow,	yántú.	Chillie, <i>n.</i>	hing bú.
Box,	shwák.	Chin,	ká rá.
Boy,	nausá, man sá.	Chunga (Bamboo	} tún.
Bracelet,	kapsan.	tube,) }	
Branch, (tree),	pan kang.	Chrysalis,	chóng púá.
Brandy,	zú.	Claw,	chakin.
Bread,	án.	Clay,	há.
Breakfast,	kan sá há.	Cloth,	ní.
Breeze,	vin.	Cloud,	rang shai.
	{ rang vin le.	Coal,	ha nak.
	{ sky wind makes.	Cock,	â pâng.
Brick,	há ( <i>lit.</i> earth).	Cold,	dang.
Bridge,	shai.	Come,	pau hi, pau he.
Brimstone,	hing.	Cord,	rú.
Bring,	pau he, pau hai.	Corn,	tzá.
Broad,	kau.	Cost,	láhí.
Broken,	pak.	Cotton,	pai.
Brook,	shwa sa.	Cough,	âhai le.
Broom,	hájá.	Countenance,	tún.
Brother,	átai.	Cow,	mai hú.
Brow,	kong ra.	Crab,	shán.
Buffalo,	lúi.	Crack,	hák (hak le).
„ wild,	lúi hing.	Crag,	há hung.
Bug,	ve koi.	Creepers,	rú ká.
Bull,	mai hú, hapang.	Crickets,	do mo.
To Burn,	van súng le.	Crocodile,	kún kí.
Burial,	rúk túá.	Crook,	kúm.
Bush,	pau ká.	Crossbow,	háp.
Butterfly,	pí twák.	Crow,	âká.
Cable,	rú.	Cucumber,	mai kú.
Cake,	án, án.	Cushion,	káng tai.
Calamus,	re.	Cut, <i>v.</i>	hut ko, hat ko.
• Calf,	mai hú sá.	Cymbal,	sí.
Camphor,	shá.	Dagger,	bít sa.
Cane,	re.	Damp,	shún.
Cannon,	ján túá.	Dance,	ázai.
Canoe,	kwá sá.	Dancing,	ázai le.
Cap,	kohom.	Dark,	núk, nak.
Carcass,	zí le ( <i>lit.</i> dead is).	Darkness,	{ rang núk le.
Cascade,	ti chóng le.		{ sky black makes.
	(water great is).	Dart,	ná hí.
Cat,	míá.	Daughter,	á phe.
Caterpillar,	tchóng.	Dawn,	shom shák.

Day,	túng tá.	Escape,	pau le.
Dead,	zí, jí.	Evening,	hang shang.
Deaf,	na ba.	Ever,	pang vai.
Dearth,	no le.	Exact,	hút zing.
Death,	zi.	Expanse,	man kam.
Debt,	tá.	Extinguish,	a mut le.
Deep,	zú.	Eye,	mí.
Deer,	mai, <i>lit.</i> flesh.	Face,	tún.
Deity,	há ráng.	Fall,	dat le.
Deluge,	ti chóng le.	False,	man pai.
Demon,	lún pú.	Family,	horiém.
"	harang mun me.	Famine,	nâ le.
Dense,	ping.	Fan,	rang zêp.
Depart,	pau há.	Far,	átai.
Descend,	jú dú.	Father,	ápá.
Dew,	rang phúm.	Feast,	mí tú le.
Diarrhœa,	mong chai le.	Feather,	â koi.
Die,	zí, zí le	Fence,	jávát.
Dig,	há tâ le.	Fern,	tak shoi.
Dike,	shwá tá há.	Fever,	kak.
Dinner,	po sá há.	Few,	hí.
Dish,	kap kú.	Fig,	púk ják.
Distant,	ántái le, atai le.	Fin,	nyék kan.
Ditch,	shwa kún.	Finger,	chákí.
Don't,	tánúk.	Finish,	múi.
Dog,	hí.	Fire,	van (vun).
Done,	múi (mui le).	Firewood,	há.
Door,	ká hák.	Firmament,	rang.
Dorc,	â shú.	Fish,	nyá.
Drake,	â pák pong.	Flannel,	ní.
Drink,	ling.	Flat,	tam kak.
Drown,	zí le.	Flea,	tseli.
Drum,	sám.	Flesh,	mai í.
Dry,	rán.	Flint,	van hong (fire stone).
Duck,	â pák nú.	Flood,	ti chong le.
Ear,	ná.	Flour,	án, á.
Early,	rang ai le.	Flower,	púa, mai pua.
Earth,	há.	Flute,	toá pít.
Earthen-ware,	páke.	Fly,	hát.
Earthquake,	shí le, mítí.	Foot,	chia.
Eat,	sa le.	Footstep,	chiá tíng mán.
Eclipse,	rang phú.	Forest,	pau.
Edge,	chung h na.	Foul,	â.
Eel,	nya { kan lú.	Frog,	lúk.
Egg,	á tí.	Fruit,	pan ják.
Elastic,	là le.	Fuel,	há.
Elbow,	chak lo.	Fur,	mún.
Elephant,	loak.	Gale,	rang tai.
Equal,	tam vai.	Gander,	â chong.
Erect,	á jóng.	Gate,	ká hák.

Giant,	mí chónng.	Javelin,	pá.
Girl,	shí kú.	Jaw,	ká.
Gnat,	mún kau.	Joint,	tsá vát.
Go,	pau lá, pau há.	Jump,	pat.
Goat,	roan.	Jungle,	paú.
God,	há ráng,	Kid,	roan sá.
Gold,	siên.	King,	vang ham.
Good,	mai mai le.	Kitten,	miá sá.
Goose,	â chónng.	Knee,	chí kúf.
Grain,	tzá.	Knife,	bít sá.
Granary,	púng.	Knot,	lúng ká.
Grass,	hing.	Knuckle,	chakí.
Grasshoppe r,	do mo.	Ladder,	chí túng.
Great,	chónng.	Lake,	núánú jí.
Grief,	on.	Lance,	chí áp ai le.
Gum,	tá.	Large,	chong, chong le.
Gun,	ján tíá.	Lazy,	húruk.
Gunpowder,	kat.	Lead,	jántáng.
Hail,	jún.	Leaf,	pan chak, <i>lit.</i> tree-hand.
Han,	ká. ko.	Leech,	vát.
Half,	hat (hut le).	Leg,	chiá.
Hand,	chak, chák.	Leopard,	tzánák, chánák.
Handle,	chang ko.	Lift,	pai pau le.
Hard,	tiák.	Lightning,	rang dung le.
Hatchet,	cháng.	Lizard,	hât, hâát, pelo ?
Head,	khúng.	Locust,	kak.
Heavy,	lí le.	Long,	là le.
Heel,	chídún.	Loose,	nai lí.
Hen,	â nú.	Lost,	má lí.
High,	tang lí.	Loud,	ní á lúng.
Hill,	hápá.	Low,	hâtàng.
Hinder,	pai kí.	Mad,	bo le.
Hip,	ke rong.	Man,	mí.
Hoe,	há.	Many,	tai hú le.
Hog,	vák lá.	Mat,	dam.
Honey,	ná tí (bee-water).	Meat,	maí.
Hornbill,	ârzá.	Medicine,	hing.
Hornet,	lím.	Middle,	hótán.
Horse,	mán.	Milk,	tzam tí.
Hot,	kám.	Mire,	hátam.
House,	ham ( humm).	Mist,	rang phúm.
Hunger,	{ vok no le.	Mole,	teha tchú, tú pá.
Hurricane,	{ stomach nothing is.	Molasses,	nam sing.
Husband,	rang chai.	Monkey,	mai nák.
Hut,	hasam pa.	Month,	â chang.
Instep,	pam.	Moon,	lénú.
Iron,	chi tok.	Moro,	á tá.
	ján.	Mother,	á nú.
Ivory,	{ loák vá.	Mouth,	tún.
Jackall,	{ elephant tooth.	Mud,	há tam.
	hían.		

Nail,	chakín.	Samber deer,	tchók.
Narrow,	tík.	Same,	tam rí.
Navel,	súng.	Sand,	sák.
Neck,	dinkú.	Seed,	hátúng.
Needle,	mat koi.	Sharp,	áná.
Nest,	â zap.	Shell,	káptúng.
New,	haz án.	Short,	tút, tut le.
Night,	{ rang nak.	Shoulder,	swa kong.
No,	{ sky black.	Shrew,	tsá tsú.
North,	man tai le.	Sick,	kak.
Nose,	ngá.	Silent,	dáng.
Not,	nákúng	Silk,	shóng.
Old,	man.	Silver,	ngúng.
Otter,	haz áng.	Sister,	á ná.
Path,	rá rom.	Skin,	kan.
Perpendicular,	lam.	Sky,	rang.
Pig,	á jóng.	Sleep,	mik nú, mik nu le.
Pigeon,	vák.	"	zíp, zip le.
Plantain,	yâ.	Slip,	nan.
Point,	nga.	Small,	hí le.
Pond,	júng.	Smoke,	van kút.
Porcupine,	tí kút.	Snake,	pú.
Porpoise,	â zí.	Soft,	naí.
Pull,	te íť?	Son,	ko sá.
Quail,	lín pau hē.	Sour,	tsánam.
Quick,	â múk.	Spear,	pá.
Rain,	kí kí.	Spider,	mák.
To Rain,	rang vat.	Spirit,	zú.
Rat,	rang vat le.	Squirrel,	ú rút.
Raven,	jú, zú.	Star,	litzú.
Raw,	â lá.	Stay,	támúk.
Red,	áráng.	Steel,	jántú.
Rhinoceros,	khi.	Stone,	lóng.
Rice, as grain,	mai nú.	Stop,	támúk, zákaí.
" husked,	tzá.	Storm,	rang chai le.
" boiled,	vóng.	Straight,	jang mai.
Ripe,	sa.	Straw,	tásá.
River,	júm.	Stream,	swáká.
" small,	shwa ko.	Sunshine,	rang han.
Road, large,	shwa nú.	Sweet,	tí.
" small,	lum, lum twa.	Take,	pau tú.
Rock,	lum nú.	Tank,	tí kút.
Roof,	lóng.	Thick,	tat.
Root,	ham tok.	Thin,	pák.
Rope,	pan ting.	Thirst,	lá.
Rum,	rú.	Thorn,	húk.
Rust,	zú.	Throat,	dín kú.
Sago,	yán, ján.	Thunder,	rang dúng.
" large,	zí.	Tiger,	tchánú, chánú.
Salt,	zók.	Tight,	chuk le.
	húm.	Tobacco,	há hing.

To-day,	á ní.
Toe,	chíki.
To-morrow,	nai ní.
Tongue,	lé.
Tooth,	vá.
Tough,	kai.
Tree,	pan.
Tribe,	nok.
Truce,	mímúl.
True,	hotzing.
Unable,	mun túak.
Vegetable,	súi.
Village,	tíng kong.
Waist,	khé da.
Wait,	támúk.
Water,	tí.
Wax,	mú.
Weasel,	â kan.
Weed,	pau.
Well,	tí kai.
Wet,	kah le.
What?	tem.
Wind,	vin.
Wolf,	shán.
Woman,	shí kú.
Wool,	roan mú.
Wrist,	chak { lo ding.
Yam,	tong.
Yes,	tai le.
Young,	sá.
1.	e tá, tá.
2.	a ní, ní.
3.	a jam, jum.
4.	a lí, lí.
5.	a gá, gá.
6.	a rok, rok.
7.	a nat, nut.

8.	a chut, chu
9.	a kú, kú.
10.	a bn, bn.
Come,	pau hí.
Go,	pau la.
Pull,	lin he.
Lift,	pai ha.
Take,	" tu.
Bring,	la he, pau he.
Bring water,	tí la he.
Bring fire,	va chup hai.
Bring fuel,	he la hai.
"	ha pau hai.
Bring more,	lá hai.
Bring men,	mí jen hai.
What's that?	tem áváng?
What hill?	tem hápá?
What stream?	tem swáka?
What tree?	tem pan ai?
What name?	bílám an pú.
What's this?	hai tem ai?
How large?	ávát chong pú.
How far?	ávát tá tai pú.
"	abat ta.
What making?	tem zing pú?
Why?	tem mók pú.
Where come from?	azang to pia?
" " "	tem tung oi pú.
Where gone to?	o ma ai o manpú?
Are there deer?	mai te chá?
Are there fish?	nya te chá?
Yes,—good,	tai le—mai.
No—bad,	man tai—man mai.
None,	man tai le.
Cut this,	hut ko.
Throw this rub-	
bish away,	avátko vúng va.
Work quick,	kí kí le.

This is mainly Banpará Nágá. Contiguous tribes often have so many words in common as to be able to converse; while in other cases the differences are so great, that the dialects are mutually unintelligible.

The letter *r* at end of a word seems rare, so far I have not met a single case, and I am inclined to think it is never used, inasmuch as all Assamese words used by them that so end, have the final *r* turned into *t*, as *khar* (gunpowder) to *khat*, *kapor* (cloth) into *kaput*, &c.

The letter *s* also seems to follow the same rule. In saying *mas* (fish), they say *mat*, and *got* for *gos* (tree).

Some words are very widely used as 'rang,' which applies to most atmospheric phenomena, and may even be traced in their word for 'god' and 'devil'. Nágá ideas of Divine persons being very limited, the same word that stands for 'devil' also serves for 'god.' Indeed their god at best is a local and generally malignant sprite, who can be propitiated by small presents of eatables.

The word 'mai' is very generally used as prefix to names of animals. The word *good* seems derived from this source, and it is equally suggestive to note that the word for *sweet*, *tí*, means also *water*.

Generally speaking, Banpará Nágá is as monosyllabic as it can be, and in speech is cut up short and jerky, especially when they are excited.

# INDEX

TO

JOURNAL, ASIATIC SOCIETY OF BENGAL, FOR 1873.

## PART I.

### ARRUS precatarius, 346

abwáb, taxes, 219

Adam Shahíd, a Bengal saint, 235

A-da-ra, king of Pegu, 56

A-di-ka, king of Pegu, 56

'Adilpúr, in Eastern Bengal, 226*n.*, 228

Adinah Mosque, 256, 257

Adinna Radza, 130

Ægle marmelos, 17

Agamavagisa, 18

Agardíp, 220*n.*

Ag Mahall, 218, 224

Ahmad Pír-pahár, a Bengal saint, 299

Ahmad Sháh, Shamsuddín Abul Mujáhid,  
of Bengal, 268

Aí, a Koch divinity, 240

aikshava, or cane liquor, 16

Aja bemoans the loss of his wife, 9

Ajítasatru, 111

Akbarnagar, in Bengal, 218

Akhámwan, 41

'Aláipúr, 227*n.*, 228*n.*

'Alungirnagar, (Koch Bihár), 241

Alang'háli River, 229*n.*

'Alá-ud-dín Jání, 349

'Alá ul Haq, a Bengal saint, 256, 261

Albuquerque, Commentaries of, 196

Alexander the Great, 232

Alfá Khán, or Alfá Husaini, a Bangalí noble-  
man, 298

'Alí Sháh, 'Aláuddín Abul Muzaffar, of Ben-  
gal, 252

Altamsh, of Dihlí, 349, 350, 359

Alvares, Francisco, 200

A-min-na Radza, king of Pegu, 56

Amu Rázi, a historian, 214

Anang Bhím Deo, of Orísá, 344

Anaurakta, 40

Andropogon muricatum, 19

Apethum sowa, 19

Angira against wine, 4

An-gu-la, king of Pegu, 56

Antonio Galvan, works of, 196

Anwar, Shaikh, 262, 266

A-ra-ka, king of Pegu, 55

Arakan, 232, 233, 234*n.*, 237*n.*

arishṭa, or soap berry liquor, 16

arrack, prohibited to Kshatriyas, 5

Ásám, 235, 236, 239*n.*

Ásava, 6

Asclepias acida, 21

Asparagus racemosus, 17

Aṭálah Mosque, 160

Athárabanká River, 227*n.*

A-thek-ka Radza, king of Pegu, 56

A-tu-tha Radza, king of Pegu, 57

Audambar, 217

Aurangpúr, 229

Aurangzib, 216*n.*

Avadana, 20

Avadānas, stories of drunkenness in, 8

A'zam Sháh, Ghiyás ud-dín Abul Muzaffar,  
257, 258

'Azimnagar, Dháká District, 284

Azo, [Hájo] Ásám, 235

### B

BABA Adam, a saint, 285

Bábá Sálili and his mosques, 283

Badáoní, 238*n.*

Bud-da-ra Radza, 56

Badr i 'Álam, a saint, 302

Badrul Islám, Shaikh, 264

Bagdí, a part of Bengal, 211, 349*n.*

Bágherhát, 227

Bágo, the native name of Pegu, 24

Bahádur, the Tirhut rebel, 248*n.*

Bahádur Sháh, Ghiyás ud-dín, of Bengal,  
250, 347

Báhirband, 224, 240

Bajipore, 263*n.*

Bakharyákund, Inscriptions at, 163

Baklá, or *Bacala*, 217, 226, 228, 229

Baklesar, in Bírghúm, 221

Balaunja, Parganah of, 119

# Index.

- Balban, 238, 248  
 Baleswar (Balasore), 225n.  
 Bullál Sen, of Bengal, 211, 221, 230n., 284, 349n.  
 Banáras, ruins of, 160  
 Bandar, near Dháká, 232, 282  
 Bandar Dú Mahall, 260  
 Banga, or Bangadesh, 211, 237, 349n.  
 Bangálah, 212  
 Bangálbhúm, 224  
 Bangálís, pay readily taxes 219n.; make bad soldiers, 255  
 Bannagar, 274  
 Banpará Nágás, vocabularies of, *vide* Appendix  
 Bágiranj, 228  
 Barantálá, 238  
 Baránasí, 238  
 Bárbak, the Eunuch, 281, 287  
 Bárbak Sháh, Rukn ud-dín Abul Mujáhid, 215, 269, 272  
 Barbakábád, 215  
 Bárbaksingh, in Bengal, 278  
 Barbosa, Odoardo, 201  
 Bardwán, 218, 223  
 Barendra, a part of Bengal, 211, 349n.  
 Barcunda, *vide* Bharkúndah  
 Barítalah, 221, 235  
 Barros, Joao de, 194, 214, 287  
 Bartholomæus, History of Indian Christianity, 199  
 Barúr, a Parganah, 273  
 bases, inflexional, of the Gauṛian Languages, 59  
 Bassia latifolia, 17  
 Bastar, 239  
 Báyzíd Majlis, 229  
 Báyzídpúr, 263n.  
 Báyzíd Sháh, Shiháb-ud-dín Abul Muzaffar, 250, 262, 268  
 Bayley, The Hon. E. C., on Kausambhi coins, 109, 191  
 ———— on Muhammadan coins, 311  
 Bázúhá, 216, 235  
 Beames, J. on the Grammar of Chand Bardái, 165  
 Bengal, divisions of, 211, 349; list of kings, 308; *vide* Bangálah.  
 Bengala, or Bengola, a doubtful town, 233  
 Bhabeshwar Rai, 217  
 Bhágavata Purana, quotations from the, 10  
 Bhagirathi River, changes its course, 220n., 221n.  
 Bhangaḥ, meaning, 253  
 Bharkúndah, 223  
 Bhátí, or Sundarban, 226  
 Bhatúriah, 263  
 Bhitarband, 224, 235, 239, 240  
 Bhítargarh, 223n.  
 Bhoja, a prince of Kanauj, 315  
 Bhowálbhúm, 224  
 bhúm, in proper nouns, 224  
 Bhumma Radza, king of Pegu, 56  
 Bihár, 221, 222, 251  
 Bihár Inscriptions, 245, 299 ff.  
 Bijai Manik, 236  
 Bikrampúr, Dháká District, 232, 284, 349n.  
 Binya Dhamma Radza, of Pegu, 120, 159  
 Binya-e-láu, king of Pegu, 159  
 Binya keng, king of Pegu, 159  
 Binya-nwe, king of Pegu, 159  
 Binya-Ran, king of Pegu, 159  
 Binya Rankit, king of Pegu, 120, 159  
 Binya-u, king of Pegu, 44, 159  
 Binya Waru, king of Pegu, 121, 159  
 Bírbbúm, 212, 222n., 223  
 Bírnnagar, 218  
 Bishukot, 212n.  
 Bishnpúr, 222  
 Blaev's map of Bengal and India, 242  
 Blochmann, Contributions to the Geography and History of Bengal, 208  
 Bocarro, Antonio, 199  
 Bohát, 260n.  
 Borhun, 214n., 232  
 Borkela, burial slabs at, 112  
 Bosnah, 229  
 Bourke, W. M., Bengal Inscriptions, 209, 290  
 Brahma Dat, king of Pegu, 56  
 Brahmaputra, 236  
 Buddha (Ghosha), 28  
 Buddha king, Thaha jita Mita, 111  
 Buddha, relics of, in Rangoon, 26  
 Bughdah Sháh, Shiháb-ud-dín, of Bengal, 250  
 Bundu, 115  
 Buranda, 115  
 Butler, J., comparative vocabulary of tribes in the Nágá Hills, *vide* Appendix  
 Buzurgmedpúr, 229  
 Byát-ta-lá, 46  
 CACCHEGATE, (Bengal) 240  
 çahan, a stuff, 216  
 Calcutta, 217  
 Camoens, the Portuguese poet, 197  
 Caor, or Brahmaputra, 236  
 Cassia arabica, 18  
 Castanheda, the Portuguese historian, 195  
 Castro, 197  
 cat, 261n.  
 cenotaphs of the Kasias, 117  
 Cerpove, 214n.  
 Chai Champá, in Hazárfabég, 300  
 Chakshana, 20  
 Chand Bardái, grammar of, 165, 329  
 Chandabhandas, a tribe, 226  
 Chandpúr, 227n.  
 Chandíjén, 221  
 Chandradíp, 226  
 Chandradeva, gets Kanauj, 316



# Index.

Chandrakoná, 218, 228  
 Char Mukundia, 229, 232n.  
 Chátágon (Chittagong) 217, 220, 228n., 229, 233, 234, 298, 299  
 Chauk'handi, 215  
 Chaumuhá, in Húglí, 214n.  
 Chichakotá, 240  
 Chihil Ghází, a saint, 273  
 Chilmári, 235  
 Chokahátu (Chutiá Nágpúr), 115  
 Chokuria, 232  
 Chronicles of the Mun tribe, 40  
 Chudangpha, of Ásám, 235  
 Chutiá Nágpúr, monuments in, 112  
 Chuttiá-pattiá, a marsh, 213  
 Cochín, Day's History of, 198  
 Codavascam, 233  
 coinage, silver, 344; of Bengal, 343  
 coins, of Kausambhi, 109; Muhammadan, 205, 269, 311, 345  
*Comota, vide Kámatá.*  
 conversions to Islám, 220, 265  
 Correa, a Portuguese historian, 193  
 corruptions, of names, in Bengali, 216n., 231n.  
*Cos Assam, 244n.*  
*Cospetir, identified, 223, 224*  
 Coutinho (Lopo de Sousa), siege of Díú, 196  
 cowrie money, 344, 345  
 Croton polyandrum, 17  
*Cuipitavaz, identified, 231*  
 Cunningham, A., General, inscriptions, 209, 247, 248, 256, 270, 271, 285, 288, 292, 298, 307  
 cyclones, in Bengal, 230

**D**ACRUZ, affairs of China, 196  
 Dak'hin Shahbázpúr, 217, 226  
 Dalton (Col. E. T.), on stone monuments in Chutiá Nágpúr, 112  
 Dandamá, 211  
*dánda, in Bengali names, 233n.*  
 Dapara, or Daspara, 231  
 Darblunga, 241  
 Darlá River, 240  
 Dáruharu, village of, 115  
 Daryá Khán Lohání, 221  
 De Barros, 194; *vide Barros.*  
 De Goes (Damian), Chronicles of king Manuel, 196  
 De Couto, Diego, a Portuguese historian, 194  
 De Laët, 225, 234n., 242, 244  
 De Laval, 201  
 delirium tremens, Sanskrit words for, 21  
 De Resende (Garcia), Life of Joao II, 196  
 De Sousa, History of the Dominicans, 199  
 Deokot (Debkoṭ), 211, 212, 239, 274, 343  
 Devala against wine, 4  
 Devapala Sarma, 315  
 Devayani, daughter of Sukrácharya, 3

Dháká, 216n., 226, 228, 282  
 Dhamma bi-yá, king of Pegu, 56  
 Dham-má Dzedi, king of Pegu, 159  
 Dhamma Dhadza, 55  
 Dhammá Pála, 55  
 Dhamma Radza, 56  
 Dhamma Thanka, 55  
*Dianga, 233*  
 Dihlí, 362  
 Diláwar Khán, of Sondíp, 231  
 Dinájpúr, 256, 263, 263n., 266, 272, 273  
 Dip-pa Radza, king of Pegu, 56  
*Dipuria, 231*  
 distilling of liquor, 18  
 Díú, in Gujarát, 260n.  
 Dodalá, a village name, 213n.  
 dog, 261n.  
 Don Manik Islands, 228  
 dráksha, or grape liquor, 16  
 drinking, praise of, 14  
 Dúars, the, 241  
 Dzán-au, 43, 159  
 Dzau-dzip, king of Pegu, 44, 159  
 Dzau-ta Kumma, 55  
 Dzaya, identified with Jaya Sinha, 33  
 Dzeya Radza, king of Pegu, 56

**E**DILPORE, *vide* 'Adilpúr.  
 Ekdálah, Fort, 212, 213n., 254  
 Enga-Thamanda Rádza, 57  
 Eng-gu-ra, 55  
 English, the, their character, 210n.  
 Eunuchs, 216; their names, 286n., 304n.

**F**AKHR UD-DÍN Lágharí, 237  
 Faria y Souza, a Portuguese Historian, 195  
 Faridpúr, 217, 226, 228, 229  
 Farid-ud-dín Ganj i Shakar, 261n.  
 Fath Sháh, Jalál-ud-dín Abul Muzaffar, of Bengal, 218, 228n., 281  
 Fath Singh, 218  
 Futhábád (Bengal), 214, 217, 226, 228, 282, 292, 313  
 Fergusson's opinion on Aṭálah Mosque, 160  
 Fidáí Khán, governor of Bengal, 219;—of Tirhut, 241  
 Firingi Bázár, 228n.  
 Firingis, 220, 228n.; *vide* Portuguese  
 Fírúzábád, *vide* Hazrat Panḍuah.  
 Fírúzpúr, near Gaur, 254  
 Fírúzpúrabád (?), 254  
 Fírúz Sháh (III.), 'Alá-ud-dín Abul Muzaffar, of Bengal, 297  
 Fírúz Sháh (III.), of Dihlí, 252, 254n., 256n., 301  
 Fírúz Shah (II.), Saif ud-dín Abul Muzaffar, of Bengal, 237  
 Fírúz Sháh (I.), Shams ud-dín Abul Muzaffar, of Bengal, 249, 250

# Index.

Fitch, Ralph, 214, 230, 234*n.*, 240  
 Fontainhas, Gabinete Litterario das, 208  
 foreign wines, notice of, 19  
 Frederick, Cæsar, the traveller, 214, 229  
 frontiers of Bengal, 220; Western frontier, 221; Southern—225; Eastern—234; Northern—239

**G**AHADAVALA, founder of a dynasty, 315

Ganda Radza, king of Pegu, 56  
 Ganga, arrack vowed to, 7  
 Gangarâmpûr, 212, 290  
 Garhi, or Taliagarh, 215, 222, 223  
 gaudi, or rum, 5  
 Gauluttî, 235  
 Gaur, or Lak'hnautî, 211, 212, 213, 215, 237, 250, 251, 260*n.*, 267, 276, 277, 299*n.*, 312, 313 3-48; *vide* Jannatâbâd

Gaur, in Silhat, 236, 243  
 Gaur Gobind, of Silhat, 279

Gaurian Languages, grammar of, 59  
 Geinda Radza, of Pegu, 57

G'hargâson (Assâm), 236  
 Ghâzipûr, on the Bhagirathî, 220*n.*

Ghâzi Shâh, Ikhtiyâr ud-dîn Abul Muzaffar, of Bengal, 254

Ghiyâspûr, 213*n.*  
 Ghiyas-uddîn 'Iwaz, of Bengal, 318

G'horâg'hât, 215, 221, 239  
 Gholâm Husain Salim, author of the 'Riyâz-ussalatîn', 209

Gits-ta-wisya, king of Pegu, 57  
 Goâlpârah, near Panduah, 256

gold, its proportional value to silver, 347  
 Gouvea's history of the Archbishopric of Goa, 198

Governors of Bengal, 246, 348  
 Govindachandra Deva, Inscription of, 314

Gor, in Silhat, *vide* Gaur  
 grog, Tantric purification of, 18

Growse, F. S., Metrical version of Prithirâj Râsau, 329

**H**AFT *Iqlm*, title of a history, 214  
 Hâji Ilyâs, *vide* Ilyâs Shâh.  
 Hâji Muhammad Qandahârî, a historian, 288

Hâjipûr, founded, 221  
 Hajrahattî, 221

Hamzah Shâh, Saif-ud-dîn Abul Mujâhid, of Bengal, 259, 368, 270

Hâns Kumâr, Râjah of Rohtâsgarh, 300  
 Hanthawati, 29

Hariâl, 221  
 Haringhâtâ River, 226

Harwa, 221  
 Hatiâgarh, 225, 227

Hâtim Khân, of Bengal, 240, 250  
 Hatalah, 235

Hazrat Panduah, or Fîrûzâbâd, or Purrooa, 212, 213*n.*, 238, 253, 256, 262, 267, 271

Heeley, W. L., Bengal inscriptions, 209  
 Henry the Navigator, Life of, 198

Herculano, History of the Inquisition in Portugal, 199

Hijlî, 224, 225  
 Huernle, A. F. R., on Gaurian Languages, 59

Horne, C., on Banâras ruins, 160  
 hospitals, for animals, 241

Hough's Christianity in India, 198  
 Hûglî, its name, 217, 228*n.*

human sacrifices, in Koch Bihâr, 240  
 Husainâbad, a Bengal mint town, 214, 298

Husainî Dynasty, of Bengal, 291  
 Husain Shâh, 'Ala-ud-dîn Abul Muzaffar, of Bengal, 222, 227, 234, 235, 240, 292, 311

Husâm-uddîn Khilji, of Bengal, 348

**I**BN Batûtab, 233, 236, 252, 281  
 Ibrâhîm Bayyû, Malik, of Bihâr, 300

Ibrâhîm Shâh, Shams-uddîn Abul Muzaffar, of Jaunpûr, 264, 265, 306

Idrakpûr, 226, 230*n.*  
 Ilâh Virdî Khân, 241

Ilyâs Shâh, Shams-uddîn Abul Muzaffar, of Bengal, 221, 253, 254, 257, 281

Indumati, wife of Aja, 9  
 inscriptions, at Dihlî, 362

insignia of royalty, 362  
 Iqlm Mu'azzamâbâd, *vide* Mu'azzamâbâd.

'Isâ Khân, 231  
 Ishwarîpûr, 227*n.*

Ismâ'îlpûr, 217, 218

**J**AHUNA or Jamunâ River, (Bengal) 214, 214*n.*  
 Jadû, son of Râjah Kâns, 265, 266

Ja'far, Nawâb, Murshid Qulî Khân, 218, 219

Jagdâl, 213*n.*  
 Jahanâbâd, 218, 223

Jâjnagar, 237*n.*, 355*n.*  
 Jâjpûr, 237, 355

Jalâl-uddîn Tabrizî, a saint, 253, 260  
 Jalâl of Silhat, *vide* Shâh Jalâl

Jannatâbâd, (Bengal) 215, 313; *vide* Gaur  
 Japla, Pargannah of, 119

Jatakas, stories of drunkenness in, 8  
 Jatmall, son of Râjah Kâns, 266

Jatmallpûr, 266  
 Jaunpûr, 160, 264*n.*

Jaunpûr Dynasty, 304  
 Jaunpûrnâmah, 160

*Jeffery* (Eastern Bengal), 232  
 Jesar (Jessore), 217

Jesval, 241, 244  
 Jhârk'hand, 223

*jittal*, a coin, 346

Jogdiah, 232  
Jor, a Pargana, 273

**K**ACHA, son of Vrihaspati, 3  
Kachhár, 235  
Kádarnvari, 18  
Kai Káuś, Rukn-ud-dín, of Bengal, 247, 249  
Kámatá, 236, 239  
Kámatápúr, 240  
Kämpfer's Japan, 200  
Kámrúp, or Kámrúd, 212*n.*, 216, 235, 236  
Kanaúj, copper grants of, 314  
*káná*, a coin, 346  
Káns, Rájah, 234, 235, 258, 259, 262, 263, 264, 268  
Kant'halbari, 241  
Karatayá River, 215, 216, 235  
Ka-ra-wika Rádza, king of Pegu, 57  
Karibári Hills, 235  
Karla, the last prince of Kanaúj, 315  
Kaṭak, or Kaṭak Banáras, 238*n.*  
Kátasan, 237  
Katha Kumma, king of Pegu, 57  
Ká-tha-wun, 55  
Kaula, sect of the, 11  
Kausambhi, coins of 109, 191  
Ke-tha-rit Radza, 56  
*káṭāḥ*, a stuff, 8  
K'hulgaon, 222, 222*n.*  
Khalifátabád, 214, 217, 227, 231  
Khán Jahán, of Khalifátabád, 227  
Kharid, in A'zamgarh District, 297  
kharjura, or date liquor, 16  
Khe-báung taken, 54  
Khizrpúr, near Dháká, 282  
K'hontag'hát, 239  
Khun-lau, king of Pegu, 159  
Khurdah, Rájas of, 34*n.*  
Kichuka, brother to Sudeshná, 6  
Koch Ásám, 244*n.*  
Koch Bihár, 239, 240, 245  
Koch Hájo, 235  
Koina (the), 113  
koli, or jujube liquor, 16  
Kuhn-lau, brother to Wareru, 143  
Kumara Saubhava, quotations from the, 9

**L**A Croze, Christianity in India, 198  
Lafitan, Portuguese discoveries, 195  
Lak'hmaniyah kings of Bengal, 211  
Lak'hnauli; *vide* Gaur  
Lak'hnuér, 211, 223*n.*, 237  
Lál Darwázah, Hindu pillar at, 163  
Land Tenures mentioned in copper plate grants, 318  
Láopallah, 214  
Larka Kola, monumental stones of the, 112  
Láúd, or Láár (Silhat), 214, 235, 236  
Lee, History of the Syrian Church, 198  
Ligusticum ajwana, 19

Linschoten's Itinerarium, 201  
Lukrahonda, 222*n.*

**M**A'CUM Khán, 241  
Madáran, 218, 223  
madatanka, or delirium tremens, 21  
Madátyaya, 21  
Madavyádhi, 21  
mádhuka, or honey liquor, 16  
madhuka or mowa spirit, 5  
Madhúmati River, 226  
Madyapásana, 20  
Maffei, *Historia Indica*, 198  
Mágha, quotations from the, 10  
Mags, 225, 228, 234*n.*, 244  
Mahá-Bud-dara, king of Pegu, 55  
Mahábhárat, quotations from the, against the use of spirits, 3  
Mahánandá River, 211, 213, 215, 263  
Mahá Radzá weng, 27  
Mahá-thá-la, king of Pegu, 55  
Mahá-thungada, king of Pegu, 56  
Maha Tsit-ta, king of Pegu, 56  
Mahendrapála, land grant of, 316  
Mahichandra, father of Chundra Deva, 316  
Mahimu Arindu Radza, 57  
Mahimu Thawala Kumáru, 57  
Ma-hing-tha Radza, 56  
Mahmudábád, 217, 235  
Mahmúdápúr, 229  
Mahmúd Sháh, of Jaunpúr, 304, 306  
Mahmúd Sháh (I.), Náçir-ud-dín Abul Muzañfar, of Bengal, 269 ff.  
Mahmúd Sháh, of Dihlí, 304  
Mahmúd Sháh, Náçir-ud-dín Abul Muzañfar, of Dihlí, 247, 248*n.*  
Mahmúd Sháh (III.), Ghiyás-ud-dín Abul Muzañfar, of Bengal, 222*n.*, 298  
Mahmúd Sháh, (II) Náçir-ud-dín Abul Muzañfar, of Bengal, 289  
Mahobákhand, 165  
Maimansingh, 235  
maireya, or rum, 16  
maireya wine, 6  
Makhçúçábád, 218  
Makhçúç Khán, 218*n.*  
Malabar, History of the Church of, 198  
Malaca Conquistada, a Portuguese epic, 198  
Maldah, 215, 294  
Maldives, 260*n.*  
Malikpúr Koyi, near Dihlí, 362*n.*  
Máljhattá, Híjli, 225  
Mandaka Radza, 56  
Mandalg'hát, 218, 222, 223  
Man-da Radza, king of Pegu, 56  
Mangalkot, near Bardwán, 296  
Mani Radza, king of Pegu, 56  
Manouchi, Aurangzebo's physician, 198  
Man Singh, 218  
Manu against the use of spirits, 3  
Ma-nu-ha Radza, 56

- Manyá Radza, 56  
 Maschain, Dháká District, 292, 293  
 Ma-rá-di Radza, 56  
 Marco Polo, 216  
*mark*, a gold weight, 344, 345  
 Maria, Vincenzo, 200  
 Márkaudeya Purána, quotations from the, 10  
 Marsden's Sumatra, 200  
 Masjidkur, 227  
 Masnad 'Alipúr, 225*n*.  
 Mech tribe, 239  
 Medinipúr, 224  
 Meneitipur, 223*n*.  
 Meng-Bala, 43  
 Meng Kyi-tswá Tsau-ke, 49  
 Mewat, 244  
 Mhan-dan, king of Pegu, 159  
 Mig-gu dib-ba Radza, 57  
 Mihmansháhi, 216  
 Míraih, 302  
 Mír Jumla, 241  
 Mírzá Khán, 241  
 Mithilá, a part of Bengal, 211, 239*n*., 340*n*.  
 Monhyin Mengtará, 121  
 Morang, 241, 244  
 Moulavadangur, 223*n*.  
*Mozoomdar*, explained, 214*n*.  
 Mu'azzamábád, or Iqlím Mu'azzamábád, 213*n*., 214, 235, 250  
 Mu'azzampúr, 236  
 Mubárák Sháh, Fakhr-ud-dín Abul Muzaffar, of Bengal, 233, 252, 256*n*.  
*muctrá*, or wine biscuits, 20  
 Mughulmárá, 224, 241  
 Muhammad Sháh, Abul Mujáhid, of Dihlí, 251, 299  
 Muhammad Sháh, of Bihár, 221, 222  
 Muhammad Sháh, of Dihlí, 303  
 Muhammad Sháh, Jalál-ud-dín Abul Muzaffar, of Bengal, 266, 268  
 Muhammad Tughluq, of Dihlí, 251, 299  
 Muhammadans, in Bengal, 220, 343  
 Muhammadan coins, notes on, 311, 350  
*muhr i nubuwwat*, 273, 274  
 Mukund, of Boonah, 229  
 Mukund Deb, of Orísá, 224, 344*n*.  
 Mun, or the people of Pegu, 34, 35  
 Murád Khán, 228, 229  
 Murádkhánah, 229  
 Murshidábád, 218  
 Murshid Qulí, *vide* Ja'far.  
 Muzaffar Sháh, Shams-ud-dín Abul Nasr, of Bengal, 289; coin of, 311
- N**ACIR Khán, 268  
 Náçir-ud-dín Khusráu, coins of, 311  
 Náçir-ud-dín Mahnúd, name of two sons of Altamsh, 362  
 Náçir-ud-dín Sipahsálar, 279, 280  
 Nadiyá, 211, 212*n*., 221*n*., 343
- Náçá Hills, vocabularies of tribes in, *vide* Appendix  
 Náçánanda, drunkenness in, 8  
 Náçor, in Bírblúm, 212, 221 260*n*.; in Jodhpúr, 260*n*.  
 nakuli, or wine biscuits, 20  
 names, of Eunuchs, 286*n*.  
 Nara Radza, king of Pegu, 56  
 Nara-thúra, king of Pegu, 55  
 Nara-thu Radza, king of Pegu, 56  
 nárikelaja, or cocoanut liquor, 16  
*nawárá*, or fleet, 220  
 Názirpúr, 228  
 Nicolo Conti, the traveller, 214*n*.  
 Nilamba, Rájah, 240  
*Noldy*, 231  
 Norikol, 232  
 Nuçrat Sháh, Náçir-ud-dín Abul Muzaffar, of Bengal, 220, 223, 227, 234, 295  
 Núdiya, old for Nadiyá, 212*n*., 343  
 Núr Jahán, 214, 229*n*.  
 Núr Quib 'Alam, a saint, 260*n*., 262, 264
- O**LK, in Bengal, 218  
 Orísá, 224, 238; revenue of, in 12th century, 344; 355  
 Osorio, Bishop of Sylves, 196
- P**ACHET, 222  
*Pacaculi*, 231  
 Padmáwatí, 238  
 Paíks, of Bengal, 255  
 paishli, or arrack, 5  
 Paithinasi against wine, 4  
 pánasa, or jack liquor, 16  
 Panduah, in Húgli, 232, 275  
 Panduah, *vide* Hazrat Panduah.  
 Panjrah, 215, 239, 263*n*.  
 Patgáon, or Pataráu, 239  
 Peal, S. E., Vocabulary of the Banpará Náçás, *vide* Appendix.  
 Pegú, 230*n*.  
 Pegu, Founder of, 30, 57  
 Pegu, History of, 23, 120  
 Pegu, Invasion of, 52  
 Pegu kings, list of, 57  
 Pegu, traditional history of, 25  
 Peppé, T. F., on Monumental stones, 119  
*Perselis* River, 244  
 Phani River, 226  
 Phayre, Sir A. P., History of Pegu, 23, 120  
 Piplí, 225*n*.  
 Pita-kat, or Buddhist books, 28  
 police, military, of Bengal, 255  
 Porto Grando, or Chittagong, 228*n*.  
 Porto Piqueno, or Húgli, 228*n*.  
 Portuguese, their Indian histories, 194; 225, 228; employed as soldiers in Bengal, 199; *vide* Firingis.  
 Portuguese in India, Authorities for the History of the, 193

Pratāpaditya, Rājah, 227<sup>n</sup>.

Prithirāj Rāsau, 165, 329

Pun-na-rika Radza, king of Pegu, 57

Purchas, the historian, 225, 233

Purniah, 215, 239

**Q**ADAR KHAN, 253

Qarāqalpāk tribe, 239

Qāzīhattī, 221

Qutb-ud-dīn Mubārak Shah, 311

**R**ADHA, (Raḥa) a part of Bengal, 211, 223, 237, 349<sup>n</sup>.

Rādzādīrit, 48

Radza Thūra, king of Pegu, 56

Raghuvansa, quotations from the, 9

Ragīawarra, 241

Rāipūr, 244

Rājā Bayābānī, a saint, 260<sup>n</sup>.

Rājendralāla Mitra, on Spirituous Drinks in India, 1, 58

” on two copper plate inscriptions from Kananj, 314

Rāj Mahall, 218

Rāj Māī, history of Tiparah, 234, 236<sup>n</sup>.

Rājāwārā, 241

Rakhang, *vide* Arakan,

Rāmānya, or the country of Pegu, 24

Rāmū, 233, 234<sup>n</sup>.

Rāngāmāī, 215;—on the Brahmaputra, 220;—in Tiparah, 237

Rangpūr, 212<sup>n</sup>, 239

Rānjanj, 221

Rasūlpūr, or Jesar, 217

Rasūlpūr River, 225

Ratanpūr, 239

rati, true weight of, 346

Raushanābād, or Tiparah, 237

Rāziyah, queen of Dihlī, 248<sup>n</sup>, 343

revenue, of Bengal, from 1582 to 1762, 219; of Koch Bihār, 241; of Orissā, 344

Rivara, Sr. da Cunha, 203

Riyāzussalātīn, a Bengal History, 209

roads, in Bengal, 220

Rohtāsgarh (Bihār), 300

Rongso, village of, 114

Roteiro (Tlio), Vasco de Gama's account, 196

**S**AHWAN, on the Indus, 222

saira, or long pepper liquor, 16

Sakuntala, scenes of drunkenness in, 8

Salimābād, 218, 227

San Romano, a Portuguese Historian, 195

Santāla, 300

Saranda Pir, Hills of, 113

Saraswatī River, 243, 244<sup>n</sup>.

Saraswatī River, in Hágī, 214<sup>n</sup>.

Sarcostema viminialis, 21

Sa'id KHAN, governor of Bihār, 218<sup>n</sup>.

Sarhat, in Bīrbhūm, 214, 222<sup>n</sup>.

sarlashkar, an officer, 214

Sātgaon, 212, 213<sup>n</sup>, 214<sup>n</sup>, 217, 227, 239, 251, 270

Satgarh (?), 238

Satrapūr, 221<sup>n</sup>.

Satrjit of Bosnah, 229

Satrjitpūr, 229

Sautrāmāni, 22

seal of prophethip, 273, 274

Sersily, 243

Shādī KHAN, 268

Shāhbandar, 225<sup>n</sup>.

Shahbāzpūr, 8

Shāh Jalāl, of Silhat, 277, 278, 293

Shāh Langar, 236

Shahr i Nau, 213<sup>n</sup>, 214<sup>n</sup>.

Shāhādpūr, 221

Shaikh Akhī Sirāj 'Usmān, 260

Shāistahnagar, 229

Shams-ud-dīn (?), son of Hamzah Shāh, 259, 264, 268

Shan kings of Pegu, list of, 159

Shans, rebellion of the, 61

Sharifābād, 218

Sheng-tsau-bu, king of Pegu, 159

Shergarh, 224

Sherpūr 'Atāī, 218

Sherpūr Firingī, 228<sup>n</sup>, 230

Sherpūr Murcha, 216, 221;—Maimansingh, 234

Sher Shāh, of Dihlī, 217, 285<sup>n</sup>.

Shihāb-ud-dīn, *vide* Bayazid Shāh.

Shihāb-ud-dīn, Qāzī, of Jaunpūr, 265

shiqdār, an officer, 214

Shukī Gosāin, of Koch Bihār, 240

Shujā', Prince, his rentroll, 219, 241; a false Shujā', 241

Siam, kings of, 49

Sīdī Badr Diwānah, 289

Sidhū, 217

Sikandar Pahlawān, 225

Sikandararpūr, near A'zamgarh, 296

Sikandar Shah, Abul Mujāhid, of Bengal, 255<sup>n</sup>, 256, 279, 281

Sikandar Shāh (II.) of Bengal, 281

Sik'karbhūm, 224

Silhat, 216, 234, 235, 236, 278

silk, raw, 215, 240

silver, import of, 230<sup>n</sup>.

Sirguja, 239

Sirkars, list of, 215

Sirisa Kutumba, 119

Sirots, 236

Sita vows wine to Yamuna, 7

Sitārām Rāi, 229

Siyar ul-Mutaakhkharīn, a history, 217<sup>n</sup>.

Sondip Island, 217, 226, 229, 230, 231

Soma nectar, 21

Sosang, (Gáro Hills) 235

sour wine, directions for preparing, 22

spirit, ban of Sukracharya against, 3

spirit, use of, prohibited in the Vedas, 2  
spirituous drink in Ancient India, 1, 58  
Srfhat, 236

Srimanta, the merchant, 218

Sudeshná, queen Viráta, 6

Sukráchary, anecdote of, 3

Sulaimánábád, 218

Sulaimán Sháh, 218

*sultán*, a Muhammadan title, 350n.

Sultán Sháhzádah, of Bengal, 287

Sundarban, 226; cultivated formerly, 231

Sunnárgaon, 212, 213n., 216 231, 233n.,

236, 237, 238, 251, 261, 283, 285, 295

Sunnáragarhi, 256n.,

Sunnárkot, 256

surá, or arrack, 16

surá wine, 6

Suvarnabhúm, kings of, 55

*Symplocos racemosa*, 18

## TABAQAT I NAQIRI, Bengal Geography in the, 212n.

Táj Khán, conqueror of Híjlí, 225

Tájpúr, 215, 239

Ta-ka-runt-bi, king of Pegu, 159

tála or toddy wine, 5, 16

Talígarah, or Garhi, 215, 222

Talíbabád, 229

Talinga, 238

Tándah, or Tara, in Bengal, 213n., 217, 223

*tankah*, a coin, 317

tanka, or wood-apple liquor, 16

Tantras, quotations from the, 11

Tárbayá, king of Burma, 47

*Tárík* i *Hamid*, a history, 234n.

Tavernier, 202

Tek-ka Meng, king of Pegu, 56

Tellez, History of Ethiopia, 200

Tenreiro (Antonio), Itinerary of, 190

Terry, E., 'Voyage to East India,' 242n.,  
243n.

Thá-du-ka, king of Pegu, 56

Tha-lé-tsi, Fort of, 53

Thamala, founder of Pegu, 34

Tha-ma-na Rudza, 56

Tha-min-Radza, king of Pegu, 57

T'háru tribe, 239

Théri Radza, king of Pegu, 56

Thiha Radza, the first king of Pegu, 55

Thiri Dhammá Thauka, 55

Thi-wa-rit, 55

Thomas, E., Initial Coinage of Bengal, 313 ff.

Thu-tsau-ha-di, 56

Thungada Radza, 56

Tiparah, 235, 236, 238

Tirhut, 221, 255

Tishya, identified with Titha, 33

Titha, king of Pegu, 55

Titáliá River, 228

Todar Mall, 214

Toba-yá-dán A-thwá History of Pegu, 23

Tolbort, T. W. H., Authorities for the History of the Portuguese in India, 193 ff.

Tribení, 214, 232, 244n.

*Triputra*, vide *Tiparah*.

Tsam-bu-dipa, king of Pegu, 56

Tsan-da-la Radza, king of Pegu, 57

Tughril, Sultán Mughis, 238

Tughril, 'Izz-ud-dín Tughán Khán, 237, 245,

*tughril*, its meaning, 246n.

Tukaroi (Orisá), 224

## U

UBA-DE-WA Meng, 55

Uba-ma-la Radza, 57

Udaipúr, in Tiparah, 237

*Udesse*, 237, 244

U-din-na Radza, king of Pegu, 56

Udny, Mr. G., 209

Upadansa, 20

Upadarsa, 20

U-run-nata, king of Pegu, 56

Ut-tama Radza, king of Pegu, 56

Uttara, king of Pegu, 55

## V

VAJAPEYA sacrifice, 22

Valentyn, François, his work, 202, 225, 226,  
212n.

Van den Broucke, 242n.

Váruu liquor, 6

Vasco de Gama, 193

Vasishtha, against wine, 4

Vijayachandra, son of Govindchandra, 317

Visvamitra, entertained with wine, 6

## W

WA-RE'RU, king of Martaban, 41, 42,  
weights, 315, 316

Westmacott, E. V., on a Bárbak Sháh In-  
scription from Dinájpúr, 273; 209

Wi-dza-ya Kamma, 56

wine biscuits, or upadansa, 20

wines, ingredients of different sorts of, 15, 18

wine, in the Ránáyana, 8

wine, in the Mahabharata, 5

Wimala, founder of Pegu, 34, 57

Wise, Dr. James, on Sháh Jalál, 278; 209,  
282, 284

witchcraft, 216, 279

## X

XAVIER, St. Francis, 197

## Y

YAJNAVALKYA against wine, 4

Yasovigraha, founder of a dynasty, 316

Yúsuf Sháh, Shams-ud-dín Ahul Muzaffar,  
of Bengal, 275

## Z

ZAFARABÁD, 231n.

Zafar Khán, of Sunnárgaon, 256n.

Ziyá-ud-dín, Mír, of Máldah, 215n.

Ziyá-ulhaq, of Bihár, 303, 304.

# JOURNAL OF THE ASIATIC SOCIETY

## Part II.—PHYSICAL SCIENCE.

No. I.—1873.

ON DIFFERENTIAL GALVANOMETERS,—  
by LOUIS SCHWENDLER.

(Continued from page 152, Vol. XLI, Part II, 1872.)\*

The first part of this investigation concluded with the following question :

*What general condition must be fulfilled in the construction of any differential galvanometer in order to make a simultaneous maximum possible with respect to an alteration of external resistance in either of the differential branches ?*

To answer this question, it will be necessary to remember, that the condition of a simultaneous maximum sensitiveness at or near balance was expressed by 3 equations, namely,—

$$\frac{(w-g)(w'+g')+f(w+w'+g'-g)}{p(g-w)g'} = \frac{2(g+w+f)}{2\sqrt{g}\sqrt{g'}-p(g+w)} \dots \text{II}$$

$$\frac{(w'-g')(w+g)+f(w+w'+g-g')}{\frac{(g'-w')}{p} \cdot g} = \frac{2(g'+w'+f)}{2\sqrt{g}\sqrt{g'}-\frac{g'+w'}{p}} \dots \text{II'}$$

and

$$g' + w' - p \frac{\sqrt{g'}}{\sqrt{g}} (g + w) = 0 \dots \text{I}$$

$g$  and  $g'$  being the resistances of the two differential coils,  $w$  and  $w'$  the two resistances at which balance actually arrives,  $f$  the total resistance in the Battery branch, and  $p$  an absolute number expressing what was termed the

\* Read before the Asiatic Society of Bengal, 6th March, 1872.

"mechanical arrangement" of the differential galvanometer under consideration.

By these three equations, which are independent of each other,  $g$ ,  $g'$  and  $p$  can be expressed in terms of  $w$ ,  $w'$  and  $f$ .

By equation I we have at or very near balance :

$$p = \frac{g' + w'}{g + w} \cdot \frac{\sqrt{g}}{\sqrt{g'}} \text{ which value substituted in equations II and II'}$$

gives :

$$\frac{(w - g)(w' + g') + f(w + w' + g' - g)}{(g' + w')(g - w)g'} = \frac{2(g + w + f)}{(g' - w')(g + w)} \dots \text{II}$$

and

$$\frac{(w' - g')(w + g) + f(w + w' + g - g')}{(g + w)(g' - w')g} = \frac{2(g' + w' + f)}{(g - w)(g' + w')} \dots\dots \text{II'}$$

and from these two equations  $g$  and  $g'$  may be developed.

This is best done by subtracting equation II from equation II' when after reduction we get :—

$$(w'g - wg')(w'g + wg' + gg' + ww') = -f(g + g' + w + w')(w'g - wg') \quad \text{* III}$$

Now it must be remembered, that with respect to our physical problem,  $f$ ,  $w$ ,  $w'$ ,  $g$  and  $g'$  represent nothing else, but electrical resistances, and that they have, therefore, to be taken in any formula as quantities of the same sign (say positive).

Consequently the above equation III would contain a mathematical impossibility (a positive quantity equal to a negative quantity), whenever the common factor  $w'g - wg'$  is different from zero.

In other words equation III can only be fulfilled if we always have :

$$w'g - wg' = 0 \dots\dots\dots \text{IV}$$

This simple relation between the resistances at which balance arrives and the resistances of the two differential coils, expresses not only the necessary and sufficient condition under which a simultaneous maximum sensitiveness can exist, but it also affords an easy means of getting at once those special values of  $g$ ,  $g'$  and  $p$ , which only solve the physical problem.

Substituting the value of either  $g$  or  $g'$ , as given by equation IV in equations II and II' and developing  $g$  and  $g'$  we have :

$$*g = -\frac{1}{2} \left( w + f \frac{(w + w')}{2w'} \right) + \frac{1}{2} \sqrt{w^2 + \frac{w}{w'}(w + w')f + \frac{(w + w')^2}{16w'^2}f^2} \dots a.$$

$$*g' = -\frac{1}{2} \left( w' + f \frac{(w + w')}{2w} \right) + \frac{1}{2} \sqrt{w'^2 + \frac{w'}{w}(w + w')f + \frac{(w + w')^2}{16w^2}f^2} \dots b.$$

the negative signs of the square roots having been omitted since they would



obviously make  $g$  and  $g'$  negative, values which cannot solve the physical question.—

Further, if we introduce the ratio

$\frac{g'}{g} = \frac{w'}{w}$ , given by equation IV, into equation I, and develope  $p$  we get :

$$p^2 = \frac{w'}{w} \dots\dots\dots c.$$

This latter expression shows the very simple relation which must exist between the *mechanical arrangement* of any differential galvanometer and the two resistances at which balance is arrived at, in order to make a simultaneous maximum sensitiveness possible.

Thus if the ratio of the two resistances at which balance arrives is fixed, the mechanical arrangement  $p$  cannot be chosen arbitrarily, but must be identical with this ratio. This is in fact the answer to the question put at the beginning of this paper.

However, the meaning of this result will be made even still clearer if we revert to equation I, by which we have

$$p \frac{\sqrt{g'}}{\sqrt{g}} = \frac{g' + w'}{g + w} = C \dots\dots\dots I.$$

expressing the ratio between the total resistances in the two differential branches, when balance is established, and which ratio is generally known under the name *Constant of the Differential Galvanometer*.

Substituting in the above expression I the value of  $\frac{g'}{g} = \frac{w'}{w}$  from equation IV we get at once

$$\frac{w'}{w} = C \dots\dots\dots d.$$

and as a second answer to the question put at the beginning of this paper we have therefore :

*A simultaneous maximum sensitiveness with respect to an alteration of external resistance in either branch of any differential galvanometer can be obtained only, if the constant of the differential galvanometer is equal to the ratio of the two resistances at which balance arrives, and this clearly necessitates that the resistances of the respective coils to which  $w$  and  $w'$  belong should stand in the same ratio.*

The general problem may now be considered as solved by the following four general expressions :

$$g = -\frac{1}{2} \left( w + f \frac{(w + w')}{2w'} \right) + \frac{1}{2} \sqrt{w^2 + \frac{w}{w'} (w + w') f + \frac{(w + w')^2}{16w'^2} f^2} \dots a.$$

$$g' = \frac{w'}{w} g \dots\dots\dots b.$$

$$p^{\circ} = \frac{w'}{w} \dots\dots\dots c.$$

$$C = \frac{w'}{w} \dots\dots\dots d.$$

### *Additional remarks.*

In the foregoing it has not been shewn that the values  $g$  and  $g'$ , expressed by equations  $a$  and  $b$ , must necessarily correspond to a maximum sensitiveness of the differential galvanometer, because it was clear *à priori*, that the function by which the deflection is expressed is of such a nature that no minimum with respect to  $g$  and  $g'$  is possible. However, to complete the solution mathematically, the following is a very short proof that the values of  $g$  and  $g'$  really do correspond to a maximum sensitiveness of the differential galvanometer under consideration.

Reverting to one of the expressions for the deflection  $a^{\circ}$  which any differential galvanometer gives before balance is arrived at, we had :

$$a^{\circ} \propto K \frac{\sqrt{g}}{N} \Delta \text{ and as the increase of deflection at or near balance is}$$

identical with the deflection itself, and further as the law which binds the resistance of the differential coils to the other resistances in the circuit, in order to have a maximum sensitiveness, is of practical interest only when the needle is at, or very nearly at, balance, we can solve the question at once by making  $a^{\circ}$  a maximum with respect to  $g$  and  $g'$ , if we only suppose  $\Delta$  constant and small enough, and as  $K$  is known to be independent of  $g$  and  $g'$ , the deflection  $a^{\circ}$  will be a maximum if  $\frac{\sqrt{g}}{N}$  is a maximum for any constant  $\Delta$  (zero included).

Further we know that  $g' = Cg$  which value for  $g'$  in  $N$  substituted will make the latter a function of  $g$  only and consequently  $\frac{\sqrt{g}}{N}$  also. We have therefore to deal with a single maximum or minimum, and according to well-known rules we have :

$$\frac{da}{dg} = \frac{N - 2g \frac{dN}{dg}}{2\sqrt{g} N^2} = \frac{U}{V}$$

and

$$\frac{d^2a}{dg^2} = \frac{V \frac{dU}{dg} - U \frac{dV}{dg}}{V^2}$$

but

$$\frac{da}{dg} = 0 \quad \text{it follows that} \quad U = 0$$

$$\therefore \quad \frac{d^2a}{dg^2} = \frac{1}{V} \frac{dU}{dg}$$

Now

$\frac{dU}{dg} = - \left( \frac{dN}{dg} + 2g \frac{d^2N}{dg^2} \right)$ , but  $\frac{dN}{dg}$  as well as  $\frac{d^2N}{dg^2}$  being invariably positive, it follows that  $\frac{dU}{dg}$  is invariably negative, and as further  $V$  is always positive it follows finally that  $\frac{d^2a}{dg^2}$  is always negative, or the value of  $g$  obtained by equation  $\frac{da}{dg} = 0$  corresponds to a maximum sensitiveness of the differential galvanometer.

In a similar way it can be shewn that the value of  $g'$  obtained by equation  $\frac{da}{dg} = 0$  corresponds also to a maximum sensitiveness of the differential galvanometer.

This is in fact a second and far more simple solution of the problem. However, it is by no means as general, nor does it adhere as closely to the spirit of analysis as the first more complicated solution.

*Effect of Shunts.*—It is clear that the introduction of shunts cannot alter the general results as given in equations  $a$ ,  $b$ ,  $c$ , and  $d$ , as long as the shunts are used merely for the purpose of carrying off a fixed quantity of current without in themselves having any direct magnetic action on the needle.

However, to avoid misunderstanding, it is well to remember that in the case of shunts being used, the values to be given to  $w$  and  $w'$  in the above equations are *not* those at which balance actually arrives, but those at which balance would arrive if no shunts were used, *i. e.*, the resistance at which balance is established when using shunts must be multiplied by the multiplying power of their respective shunts, before they are to be substituted in the equations  $a$ ,  $b$ ,  $c$  and  $d$ .

*Mechanical arrangement designed by p.*—The condition which must be fulfilled in the construction of any differential galvanometer to make a simultaneous maximum sensitiveness possible was expressed by

$$p^2 = \frac{w'}{w} \dots\dots\dots c.$$

while  $p = \frac{m' n'}{m n}$  and it will be now instructive to enquire what special physical meaning equation  $c$  has.

By  $m$  was understood the magnetic effect of an average convolution (*i. e.* one of average size and mean distance from the magnet acted upon, when the latter is parallel with the plane of the convolutions) in the differential coil of resistance  $g$ , when a current of unit strength passes through it. Similarly  $m'$  was the magnetic effect of an average convolution in the other differential coil of resistance  $g'$ .

Further  $n$  and  $n'$  were quantities expressed by

$$U = n \sqrt{g}$$

and 
$$U' = n' \sqrt{g'}$$

$U$  and  $U'$  being the number of convolutions in the two coils  $g$  and  $g'$  respectively.

Now we will call  $A$  half the cross section of the coil  $g$  (cut through the coil normal to the direction of the convolutions) and which section, as the wire is to be supposed uniformly coiled, must be uniform throughout.

Thus we have generally

$$\frac{A}{c(q + \delta)} = U$$

wherever the normal-cut through the coil is taken.

$c$  is a constant indicating the manner of coiling, either by dividing the cross-section  $A$  into squares, hexagons or in any other way, but always supposing that however the coiling of the wire may have been done, it has been done uniformly throughout the coil. (This supposition is quite sufficiently nearly fulfilled in practice because the coiling should always be executed with the greatest possible care, and further the wire can be supposed practically of equal thickness throughout the coil).

$q$  is the metallic section of the wire, and  $\delta$  the non-metallic section due to the necessary insulating covering of the wire.

Further we have

$g = U \frac{b}{q\lambda}$  where  $b$  is the length of an average convolution and  $\lambda$  the absolute conductivity of the wire material supposed to be a constant for the coil.

Now, for brevity's sake, we will suppose that  $\delta$ , the cross-section of the insulating covering, can be neglected against  $q$  the metallic cross-section of the wire.

Consequently we have

$$\frac{A}{cq} = U \text{ (approximately)}$$

and 
$$g = U \frac{b}{q\lambda}$$

$$\therefore U = \sqrt{\frac{A\lambda}{bc}} \cdot \sqrt{g}$$

$$\text{or} \quad n = \sqrt{\frac{A\lambda}{b\sigma}}$$

$$\text{similarly} \quad n' = \sqrt{\frac{A'\lambda'}{b'\sigma'}}$$

$$\therefore \frac{n'}{n} = \sqrt{\frac{A'\lambda' b\sigma}{A\lambda b'\sigma'}}$$

But using wire of the same conductivity in both the differential coils, which should be as high as is possible to procure it, and further supposing the manner of coiling to be identical in both coils, we have

$$\lambda = \lambda'$$

$$\sigma = \sigma'$$

$$\therefore \frac{n'}{n} = \sqrt{\frac{A' \cdot b}{A \cdot b'}}$$

Further we know\* that if the shape and dimensions of each coil are given, and in addition also their distance from the magnet acted upon, it will be always possible to calculate  $m$  and  $m'$ , though it may often present mathematical difficulties, especially if the forms of the two coils differ from each other and are also not circular. This latter condition is generally necessitated in order to obtain the greatest absolute magnetic action of each coil in as small a space as possible.

However it is clear that we may assume generally that the two coils have each an average convolution of identical shape and of the same length, placed at an equal distance from the magnet acted upon, and that therefore the magnetic action of each coil is dependent on the number of convolutions only.

In this case we have evidently

$$m = m'$$

$$b = b'$$

$$\frac{n'}{n} = \sqrt{\frac{A'}{A}}$$

$$\text{and as } p = \frac{n'}{n} \cdot \frac{m'}{m}$$

we have finally

$$\frac{A'}{A} = \frac{w'}{w} \dots\dots\dots e.$$

Equation *e* shows at once that under the supposed conditions, *i. e.*, when the average convolutions in each coil are of equal size and shape, the wire used in either coil is of the same absolute conductivity, and that the thickness of the insulating material can be neglected against the diameter of the wire :

*The wire used for filling each coil must be invariably of the same diameter, otherwise a maximum sensitiveness is impossible.*

How the above simple law expressed by equation *e* would be altered, when the given suppositions were not fulfilled, must be found by further calculation, but as the latter is intricate and a more general result is not required in practice, I shall dispense at present with this labour.

*Special Differential Galvanometers.*—Here shall be given the special expressions to which the general equations *a*, *b*, *c* and *d*, are reduced when certain conditions are presupposed.

*1st case.*—When *w* and *w'*, the two resistances at which balance is arrived at are so large that *f*, the resistance of the testing battery can be neglected against either of them without perceptible error. Substituting therefore *f* = 0 in equations *a*, and *b*, we get :

$$g = \frac{w}{3} \dots\dots\dots a.$$

$$g' = \frac{w'}{3} \dots\dots\dots b.$$

and the other two remain as they are namely :

$$p^2 = \frac{w'}{w} \dots\dots\dots c.$$

$$C = \frac{w'}{w} \dots\dots\dots d.$$

*2nd case.*—When the battery resistance *f* cannot be neglected against either *w* or *w'*, but when the two resistances at which balance is arrived at are invariably equal.

Thus substituting in the general equation

$$w = w' = w$$

we get

$$g = g' = g = -\frac{w+f}{3} + \frac{1}{3}\sqrt{4w^2 + 8fw + f^2} \dots\dots\dots a, b.$$

$$p^2 = 1 \dots\dots\dots c.$$

$$C = 1 \dots\dots\dots d.$$

*3rd Case.*—When the conditions given under 1 and 2 are both fulfilled or

$$w = w' = w$$

and

$$f = 0$$

then we have

$$g = g' = g = \frac{w}{3} \dots\dots\dots a, b.$$

$$p^2 = 1 \dots\dots\dots c.$$

$$C = 1 \dots\dots\dots d.$$

The very same result which was obtained by direct reasoning at the beginning of this paper.

*Applications.*—Though the problem in its generality has now been entirely solved, it will not perhaps be considered irrelevant to add here some applications.

For our purpose differential galvanometers may be conveniently divided into two classes, *viz.*, those in which the resistances to be measured vary within narrow limits, and those where these limits are extremely wide.

To the first class belong the differential galvanometers which are used for indicating temperature by the variation of the resistance of a metallic wire, exposed to the temperature to be measured. As for instance, C. W. Siemen's Resistance Thermometer for measuring comparatively low temperatures, or his Electric Pyrometer for measuring the high temperature in furnaces.

It is clear that for such instruments the law of maximum sensitiveness should best be fulfilled for the average resistance to be measured, which average resistance under given circumstances is always known.

To the second class belong those differential galvanometers which are used for testing Telegraph lines, at present the most important application of these instruments. In this case each differential coil should consist of separate coils connected with a commutator in such a manner that it is convenient to alter the resistance of each coil according to circumstances, *i. e.*, connecting all the separate coils in each differential coil parallel, when the resistances to be measured are comparatively low, and all the separate coils consecutively, if the resistances to be measured are high, &c., &c., fulfilling in each case the law of maximum sensitiveness for certain resistances, which are to be determined under different circumstances differently, but always bearing in mind that it is more desirable to fulfil the law of maximum sensitiveness for high resistances, when the testing current in itself is obviously weak, than for the low resistances.

An example will shew this clearer. Say for instance a differential galvanometer has to be constructed for measuring resistances between 1 and 10,000. A Siemen's comparison box of the usual kind ( $\frac{1}{10,000}$ ) being at disposal, it will be convenient and practical to decide that the two differential coils should be of equal magnetic momentum, from which it follows that  $C$  as well as  $p$  must be unity, or in other words that the two coils must be of equal size, shape and distance from the needle, and must also have equal resistances, *i. e.*, must be filled with copper wire of the same diameter. The resistance of each coil is then found by

$$g = -\frac{w+f}{3} + \frac{1}{3} \sqrt{4w^2 + 8fw + f^2}$$

where  $f$  is the resistance of the battery and  $w$  a certain value between

1 and 10,000, the two limits of measurement. The question now remains to determine  $w$ .

It is clear that the law of maximum sensitiveness has not to be fulfilled for either limit, because they represent only one of the 10,000 different resistances which have to be measured, but it is also clear that to fulfil the law for the average of the two given limits would be equally wrong, inasmuch as the maximum sensitiveness is far more required towards the highest than the lowest limit. We may assume, therefore, that it is desirable to fulfil the law for the average of the average and the highest limit, which gives

$$w = 7500$$

against which the resistance of the battery may always be neglected.

Consequently we have

$$g = \frac{w}{3} = 2500$$

for each coil.

Now if the coil be small, and consequently the wire to be used for filling it is thin, the value  $g = 2500$  wants a correction to make allowance for the thickness of the insulating material, by which  $g$  becomes somewhat smaller.\*

Before concluding I may remark that the question of the best resistance of the coil, when the resistance to be measured varies between two fixed or variable limits, can be solved mathematically by the application of the Variation Calculus.

\* These expressions for  $g$  and  $g'$  must be corrected, if the thickness of the insulating covering of the wire cannot be neglected against its diameter. The formula by which this correction can be made was given by me in the *Philosophical Magazine*, January, 1866, namely

$$\text{corrected } g = c g \left( 1 - 4 \sqrt{g m^2} \right)$$

where  $g$  = the resistance to be corrected and expressed in Siemen's Units,

$$\text{and } m = \delta \sqrt{\frac{c \pi \lambda}{AB}}$$

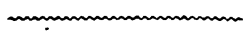
$\delta$  = radial thickness of the insulating covering expressed in millimetres.

$c$  = a co-efficient expressing the arrangement adopted for filling the available space uniformly with wire. Namely, if we suppose that the cross section of the coil, by filling it up with wire, is divided into squares we have  $c = 4$ , if in hexagons  $c = 3.4$ , &c., &c.

$\lambda$  = absolute conductivity of the wire material ( $Hg = 1$  at freezing point).

$A$  = half the section of the coil in question when cut normal to the direction of the convolutions, and always expressed in square millimetres.

$B$  = length of an average convolution in the coil, and expressed in metres.





ON THE LAND-SHELLS OF PENANG ISLAND, WITH DESCRIPTIONS OF THE  
ANIMALS AND ANATOMICAL NOTES; *part second*,\* *HELICACEA*,—  
by DR. F. STOLICZKA.

[Read and received 7th August, 1872.]

(With plates I to III.)

In this group of pulmoniferous land-shells I shall notice twenty three species, belonging to the *Zonitidæ*, *Helicidæ*, *Bulimidæ*, *Clausiliidæ*, *Philomycidæ*, *Pupidæ*, *Streptaxidæ*, *Veronicellidæ* and *Vaginulidæ*. The majority of the species are new, except a few previously described from the neighbouring country, and on one or two of such commonly distributed species, as are *Stenogyra gracilis* or *Ennea bicolor*.

Nearly all the species had been collected with the animals living, and I have spared no pains in order to make the detailed anatomical account as complete, as it appears desirable for a correct generic determination.

I scarcely need to mention, that on the whole the fauna is characteristically Malayan, the same fauna which extends from the Philippine islands through Burma and Arakan into the warm valleys of Sikkim. In the plains of Bengal it mixes with the Indian fauna proper.

I cannot help repeating the urgent request to my conchological friends in India, that they may favour me with live specimens of the species of shells occurring in their neighbourhood. In the *Helicaceæ* especially, the anatomical characters are indispensable for a correct generic determination, and without this it will not be possible to obtain a natural arrangement of our terrestrial Mollusca.

*Fam. Zonitidæ.*

*RHYSOTA*† *CYMATIUM*, (*Benson*). Pl. i, figs. 1-3 and pl. ii, figs. 13-15.

*Helix Cymatium*, Benson, apud Pfeiffer, Novit. Conch. I, p. 58, pl. xvii, figs. 1-2.

Penang specimens, which slightly differ in the height of the spire, (see figs. 1-3, pl. i,) agree in almost every point of structure with the type shell, described by Pfeiffer from Lancavi, a small island situated a few miles north of Penang. The increase of the volutions is in both exactly the same, the upper side of the whorls is marked with fine oblique rugosities, the lower is spirally striated; in fresh specimens the former is silky brown, the lower olivaceous brown, the inside of the aperture is in full grown specimens cover-

\* Continued from J. A. S. B., for 1872. Vol. XLI, pt. ii, p. 271.

† Albers, *Heliceen*, edit. E. v. Martens, p. 54.

ed with a kind of a nacreous callose layer. The only noticeable difference consists in the narrowness of the umbilicus, its width being in all the Penang specimens, which I obtained, about one twelfth of the diameter of the shell, while in Benson's type it is only one seventh of the same diameter.

The species is found all over Penang hill from elevations of about 300 to 2500 feet, and both on the ground as well as on trees, but chiefly on the latter; it is, however, not common, and adult shells are indeed extreme rarities.

The closely allied *Rh. densa*, (Adams),\* only differs by a slightly smaller number of whorls, the last being much wider. *Rh. Chevalieri*, (Souleyet), differs in the same character, though it has the umbilicus of exactly the same size as the Penang variety of *cymatium*.

The animal is stout and rather short, its total length being less than twice the diameter of the shell; the posterior part of the body is the shorter one, and above rather sharply ridged; it ends with a large gland and a projecting horn above it. The whole body is uniform more or less dark brown, laterally strongly warty and obliquely grooved; the pedal row is very distinctly margined on both sides with an impressed line, and the margin of the foot below it is broad, smooth, marked with alternately brown and pale oblique stripes, so as to give the appearance of a variegated fringe. The eye peduncles and tentacles are of usual proportionate length, dark brown or even blackish, the latter with pale tips. On the whole, the general colour of the specimens varies a great deal; the young are mostly pale brown with an olivaceous tinge, while in old ones the neck, including the head and pedicles, become almost black.

The mantle is somewhat paler than the body, its edge moderately thickened. There are two small linguiform shell-lobes present, a right one, just below the inner or posterior angle of the aperture of the shell, thus playing on the inner lip, and producing its moderately distinct nacreous and callose structure. The other lobe lies below the outer periphery of the shell on the basal side; it projects from the outer end of a rather elongated very narrow fringe, which is separated from the edge of the mantle itself. The right neck-lobe is entire, thick, rounded, somewhat freely projecting at the lower or umbilical end. The left neck lobe is divided in two portions, the upper elongately rounded, the lower much narrower, with the upper end somewhat pointedly extended. The edge of the mantle which secretes the umbilical margin of the peristome is internally considerably thickened, (comp. pl. ii, fig. 13).

I have not been able to see satisfactorily the exact structure of the genital system, but, as far as it could be examined, it appears almost entirely to agree with that of *Rhysota semiglobosa*, figured by Semper. There certainly are no appendages present—neither on the penis, nor on the seminal duct or uterus.

\* E. v. Martens, Ost-Asiat. Expedit. p. 230, pl. 10, fig. 1.

The jaw is smooth, semilunar, with a round projection in the middle of the concave edge; it is about 2.5 m.m. broad.

The radula is comparatively of very great length. In a middle-sized specimen it measured 7 m.m. in length and 3 m.m. in breadth, although one of the ends was not quite perfect. I counted 106 transverse rows and about 141 teeth in each row. The centre tooth has a comparatively short point without any lateral denticles, and is somewhat smaller than the adjoining laterals. The first of these has a long, laterally bent, rather blunt projection; the following very gradually decrease in size and the middle cusp becomes gradually more pointed and curved, while the basal plate decreases. With about the fiftieth tooth the end begins to become bicuspid, and on about the hundredth tooth on either side, the two cusps are sharpest and best developed.

Semper (Reisen im Archipel der Philipp., Vol. III, p. 68) says that *Rhysota* does not possess any developed shell lobes of the mantle. In the present species their existence is undeniable, and still all the other characters of the animal and shell point towards the greatest relation of *R. cymatium* to other typical species of the genus, which scarcely would have any meaning, if it were restricted in the sense given to it by Semper. I very much doubt, that all the species with polished lower surface of the shell, referred by Semper to *Rhysota*, have no shell-lobes. How then do they produce the smoothness of the shell? I generally found shell-lobes essential for that purpose. But supposing some of the species really had no shell-lobes, this would be no sufficient reason for excluding any other species which possess them from *Rhysota*; for in *Xesta* we have a similar mixture of forms with and without shell-lobes.

Thus the only anatomical difference, which remains to be considered as distinguishing *Rhysota* from *Xesta*, is the simple form of the genital organs in the former. How far this character is really reliable for generic distinctions, is a point by no means easily settled, as I had already occasion to notice when speaking of the anatomy of the two species of *Sitala* (*Conulema*, olim) (Journ. A. S. B., Vol. xl, Pt. ii, 1871, p. 236 &c.), *S. ategia* and *S. infula*.

When we compare the characters relating to the presence or absence or form of the mantle lobes, we meet with a perfect similarity between *Rhysota* and *Rotula*. The distinction between the two merely rests in the presence of an amatorial gland in the latter genus, while the shells only differ in the upper side of *Rhysota* being irregularly corrugated, and in *Rotula* reticulately striated, or transversely costulated.

In speaking of the shell of *Rhysota*, Albers gives the peculiarly rugose upper surface as one of the most important characters of the genus.

*ROTULA*\* *BIJUGA*, n. sp., Pl. i, figs. 4-7 and pl. ii, figs. 16-18.

*R. depressa* conoidea et suborbiculata, vel late conica, angustissime umbilicata, tenui, cornea, pallide succinea; anfractibus 5·5 ad 6·5, suturâ simplici, suprâ rare filiforme marginata, junctis, lente accrescentibus, in superficie superiore convexiusculis, costulis transversis obliquis, confertis, striis spiralibus confertissimis ac plus minusve distinctis intersectis, crispatis seu subgranulosis, ornatis; ultimo ad peripheriam acute carinato, ad basin modice inflato, nitido, sublevigato, striis incrementi radiantibus atque alteris spiralibus sub-obsoletis notato, medio cancellatus; apertura angulatim semilunari, paulum obliqua, labio tenuissimo vix distinguendo, labro ad marginem tenui, neque expanso, neque incrassato, ad insertionem umbilicalem brevissime reflexo instructa.

Dimensiones varietatum frequentium:—

Diam. major.	D. minor.	Alt. testæ.	Alt. aperturæ.	Lat. aperturæ.
a. 14·5	13·5	11·0	6·0	7·6 m.m.
b. 16·2	15·0	10·9	6·6	8·2 „
c. 17·4	15·6	12·0	7·2	9·2 „
d. 17·4	16·0	10·9	7·0	9·0 „

Diam. maj. speciminis maximi 18·8 m.m.

It will be seen from the above measurements, which are taken from the four figured specimens, that the height of the shell is very variable, but the increase of the whorls is very nearly quite constant. The upper convexity of the whorls also slightly varies; the sides of the spire are generally nearly straight, more rarely conspicuously convex; occasionally the peripheral keel is somewhat projecting above the suture. The ornamentation is characteristically that of *Rotula*, reticulately sculptured above, nearly smooth below. The transverse ribs on the upper surface are traversed by fine spiral lines, which generally only produce a slight undulation in the direction of the ribs, sometimes, however, a fine granulation is formed. As regards form, the present species very closely resembles the Burmese *R. anceps*, (Gould), and also the South Indian *R. Shiplayi*, the first has, however, the upper costulation very fine and no spiral striæ, while the latter has both much stronger developed, producing a granular surface, and the shell is also more solid. The third very closely allied species is *R. indica*, differing principally by a greater width of the last whorl, and also by a stronger sculpture.

\* Comp. Journ. A. S. B., 1871, Vol. xl, pt. ii, p. 231. The name *Rotula* has also been applied in the ACTINOZOA, but if our zoological classification should make such rapid progress, as it has done lately, it will, I think, in no long time be almost impossible to find new names for the generic groups, and we shall be forced to modify the existing rules at least so far that the same name may become reapplicable in at least the five or six principal divisions of the animal kingdom. A further relaxation of the rule would scarcely prove beneficial and would hardly be necessary.

The animal of the Penang species, when fully extended, equals in length about twice the longer diameter of the shell; back roundly flattened above, foot posteriorly obtusely ridged, terminating with a large gland which is superseded by a small horn; pedal row very distinct and the edge of foot below obliquely striated. The general colour of the body is pale or livid grey, with a general reddish tinge when full grown. A pale yellow (in young), or more or less distinctly cinobor red (in adults), stripe extends along the centre of the back and the superior ridge of the foot, the former is bounded on each side by a broad black stripe, originating at the base of each peduncle and continuing to the mantle, and below this stripe there is again a yellowish or red line. The posterior red band is only edged with black. The sides of the foot, both anteriorly and posteriorly, are more or less distinctly variegated with impure black and tinged with red; front of head between the two pedicles and tentacles with a black spot; pedicles and tentacles generally greyish, the latter with a reddish tinge, and with pale, rather large, globular tips, the former with a black ring at the base where the longitudinal black bands begin.

The mantle is moderately thickened. The right shell lobe is entirely obsolete, or only indicated by a very slight extension of the edge, a short distance below the upper angle of the aperture of the shell. Sole of foot divided by a longitudinal groove. The right neck lobe is large and extends as a moderately broad fringe to near the retractor muscle where it terminates with a free end. The left neck lobe is smaller with a linguiform free outer end. The left outer edge of the mantle is externally also entire, like the right one, but about the middle of the basal portion it has internally a distinct lobe, about 2 m.m. in length, which in its situation strictly speaking lies between the shell and the neck lobe; but as it becomes reflected with its edge over the shell, it has to be regarded as the representant of the left shell lobe. The lower portion of the left neck lobe is only a thickened swelling, extending as a narrow inner rim of the edge of the mantle to near the umbilicus. Both the right and left neck lobe have a large black spot, in continuation of the lateral black bands of the back.

The general anatomy does not differ in any essential point from that of *R. anceps*, as briefly noticed by me in Journ. A. S. B., Vol. xl, pt. II, 1871, p. 233, pl. xvii, fig. 1.

The jaw is semilunar, perfectly smooth, with obtusely rounded corners, and a slight rounded projection in the centre of the concave edge; it is about 1.5 m.m. broad.

The length of the radula is about 4.5, and its breadth above 1.5 m.m.; it is composed of about 105 transverse, nearly straight rows of teeth, there being about 121 teeth in each row. The form of the teeth again very closely resembles that of *Rot. anceps*, (loc. cit.). All the points extend beyond the upper edge of the basal plate; the central is somewhat widened below

the terminal point, contracted in the middle, but it has no distinct denticles at the sides. The laterals gradually become more and more turned, and curved, with a small inner and scarcely a trace of an outer denticle; up to the 20th they very gradually diminish in size, then a very slight break follows, the 21st being somewhat sensibly smaller and first distinctly bicuspid at the tip, while at the same time the size of the basal plate has much diminished, until in the last teeth it almost entirely becomes obsolete; the two terminal cusps on the other hand become gradually more and more equal.

The genital organs have a distinct amatorial gland, possessing near its origin a large globose appendage, internally composed of an elliptical largely cellular mass, in which the cells are concentrically arranged with their longer diameter perpendicular to the walls of the ellipse. The posterior part of the gland is filled with a finely granular substance,—probably calcareous particles. The vas deferens has only one slight enlargement about the middle of its length; it consisted in a simple thickening of the walls, but I could not trace any calcareous particles in it. Towards the end, where the penis is lodged, the tube is widest and somewhat curved, but there are no other appendages, or calcareous sacs accompanied with a flagellum, present, such as have been observed in many other species of *Rotula*.

*SITALA*\* *CARINIFERA*, n. sp. Pl. i, fig. 8.

Testa globose conoidea, cornea, apice obtusula, angustissime perforata; anfractibus quinque, gradatim accrescentibus, convexe angulatis, sutura simpliciter junctis, transversim minutissime striolatis, superis infra medium carinis filiformibus duobus ornatis, ultimo ad peripheriam tricarinato, basi planate convexiusculo, lævigato; apertura semilunari, verticali, non descendente, labro extus tenuissimo, in regione columellari paululum reflexiusculo.

Diam. maj. 2·2, minor 2, alt. testæ 2 m. m.

*Hab.*—‘Penang hill,’ in foliis *Coffea arabica*, specimen unicum.

The animal of this species is exactly like that of *S. infula*, figured in pl. xviii, in J. A. S. B., Vol. xl, Pl. ii, for 1871; it has a generally pale brownish grey colour; but having obtained a single specimen, I did not like to sacrifice the shell, in order to notice the internal structure; for when examining these little species one is by no means sure, that he will obtain from a single specimen an insight into the whole anatomy.

The present species is closely allied to the Nilgheri *Helix tricarinata*. Blf., which is also a *Sitala*, and differs by a more depressed and broadly conical shape, and by having a much wider umbilicus.

\* H. Adams proposed this name for *Helix infula*, Bens., as type (P. Z. S. for 1865, p. 408). I had unfortunately overlooked this reference, when I proposed for Benson’s *atagia* (and *infula* and a few others) the name *Conulema*, which must now be regarded as identical with *sitala* (J. A. S. B., xl, pt. II, p. 236.)

*MACROCHLAMYS*\* *STEPHOIDES*, n. sp. Pl. i, fig. 9, and pl. ii, figs. 19-20.

*M. orbiculata*, spira depresso convexiuscula, basi medio concaviuscula, angustissime perforata, tenui, succineo cornea, unicolore, circa umbilicum albescente; anfractibus sex, lentissime accrescentibus, sutura lineari junctis, infra suturam angustissime adpressis, nitidis, fere politis, striis incrementi transversis minutissimis, nonnunquam fere omnino obsoletis, notatis, supra convexiusculis; ultimo ad peripheriam fere uniforme convexo; apertura sub-semilunari, vix obliqua, labio per-tenui, labro simplici, ad basin paulum sinuose producto, ad insertionem umbilicalem anguste atque breviter reflexo. Diam. maj. 11·6, d. min. 10·7, alt. 7; alt. apert. cum perist. 4·8, ejusdem lat. 5·6 m.m.

The nearest ally of this species, as regards general character and size, is the Andamanese *Macroch. stephus*,† (Benson), differing from the present species by a somewhat more depressed form and by having the sides of the spire nearly straight or slightly concave, but not convex. *Macroch. hyalina*,‡ Martens, is also very closely allied, it is a larger shell and with a more rapid increase of the volutions, the difference between the smaller and larger diameters being 2·5 m.m. In Burma and Sikkim several other allied forms occur, such as *M. hypoleuca*, *patane*, *petasus*, &c., but they are all smaller and more depressed shells.

The species is rare; I found a single live specimen and half a dozen of old shells at the base of Penang hill, about 300 feet.

The animal is long and very slender, blackish grey above and on the pedicles, paler at the sides of the foot, which has a long and thin horn above the tail gland. Both shell and neck lobes are well developed, the right ones larger than the respective left ones. The two shell lobes are linguiform, and the right one, when fully expanded, covers almost half of the upper surface of the shell. The lower portion of the left neck-lobe is merely represented by a slightly thickened rim, extending from the place of insertion of the left shell-lobe to near the umbilicus.

The jaw is one mill. broad, with a central rounded tooth in the concave edge and with the corners somewhat bent outwardly; a form which is also met with in several other species of *Macrochlamys*.

The radula has not been seen perfect, but it does not appear to have been more than four mill. long, and there appear to have been at least 101 teeth in each transverse row; all with very sharp points; the central with

\* Comp. Journ. A. S. B., vol. xl, pt. ii, 1871, p. 246.

† The figure of this species in Conch. Ind., pl. 62, is taken from a young or imperfect specimen, in which the peculiarly depressed form is not so well discernible as in an adult shell. Fig. 6 on the same plate is incorrect, because it does not shew the sinuously produced median basal portion of the peristome.

‡ Prouss. Exped. nach Ost Asien, II, p. 241, pl. 12, fig. 5.

a distinct denticle on either side, and the last laterals with two small unequal cusps; all have the basal plate obtusely narrowed outwardly.

The genital organs are very similar to those of *M. indicus*, Benson, but much more slender; the amatorial gland is very thin (in a young specimen), there is a small coecal appendage on the vas deferens, and a flagellum at the base of the penis, just before a swelling filled with calcareous particles.

**MICROCYSTIS\* PALMICOLA**, n. sp. Pl. i. fig. 10.

*M.* testa late conica, tenui, cornea, angustissime umbilicata; anfractibus quinque, gradatim accrescentibus, convexiusculis, sutura simplici junctis, supra splendore albide sericino, transversim oblique, minutissime atque confertissime, striolatis, ultimo ad peripheriam acute angulato; basi convexiuscula, olivaceo nitita; apertura subsemilunari, extus angulata, obliqua; labro tenui, simplici, ad basin recedente, ad umbilicum reflexo; labio tenuissimo, vix distinguendo. Speciminis maximi diam. maj. 2·8, d. minor 2·6, alt. 2·2, diam. apert. 1·7, ejusd. alt. 0·95 m.m.

*Hab.*—Penang, sub corticem *Coccoz nucifera*, haud frequens.

The shell is distinguished from allied species by its comparatively sharply angular last whorl, slightly inflated base and by the peculiar silky and very finely striated upper surface.

The animal when fully extended equals in length about four diameters of the shell; it is rather dark brownish grey, darkest on the tentacles and on the rostrum; posterior gland superseded by a small horn.

\* **HELICARION† PERMOLLE**, n. sp. Pl. i, fig. 11 and pl. ii, figs. 21-23.

*H.* testa depresso inflatæque conoidea, tenuissima, fere membranacea, translucens, pallide lutescente, vix perforata, spira ultimo anfractu multo brevior; anfractibus 4·5, rapide accrescentibus, ad suturam simplicem adpressis, nitidis, convexiusculis, ultimo inflato, ad peripheriam rotundato, transversim lente arcuateque striatulo, ad basin striis spiralibus sub-obsoletis notato; apertura lunari, valde obliqua, labio albescente, minutissime puncticulato, labro tenuissimo, simplici, ad basin valde recedente, ad marginem interiorem umbilici breviter reflexiusculo. Diam. maj. 8·4, d. min. 7·4, alt. 6·3; alt. apert. cum perist. 4, ejusd. lat. 4·3 m.m.

The rather strongly elevated spire, and the membranaceous and transparent structure of the shell, separate this species from the numerous allied forms of the Philippines. The species is rare; I only obtained about half a dozen specimens on low bushes or between old vegetable matter on the ground, about 500 feet above the sea, on Penang hill.

\* *Microcystis*, Beck. Comp. Semper in Reis. Arch. Philipp., pt. II, vol. iii, 1870, p. 43, and Stoliczka in J. A. S. B., vol. xl, pt. II, p. 251.

† Semper, Reisen Archip. der Philippinen, vol. iii, p. 20.



The animal is slender and very long; when fresh the extended foot is three times the longer diameter of the shell, which is then entirely covered by the mantle; but in captivity the shell lobes shrink very rapidly, being reduced to narrow linguiform appendages. Middle of back and of the hind foot whitish or very pale brownish, with a slight pinkish tinge; a broad blackish band runs from each pedicle along the sides of the whole back, and also on the sides of the posterior part of the foot, as far as the terminal gland, which is superseded by a very distinct pointed horn; the dark colour extends down to the pedal row, while a large black spot about the middle of the foot on each side reaches down to the sole; pedicles long, grey; tentacles short and almost white; mantle blackish with small whitish dots. All the four mantle lobes are well developed, the left shell and neck lobes are proportionately somewhat larger than the corresponding right ones, and each of the former has a deep but narrow incision in its lower portion.

The jaw is about one mill. broad, quadrant shaped, smooth, without any projection in the centre of the concave edge, like in most other species of the genus.

The radula is moderately broad and nearly 2.5 m.m. long; there are 95 transverse rows and about 121 teeth in each row, all remarkably small and from the tenth tooth they somewhat rapidly decrease in size towards the edges. The centre tooth has two distinct denticles on either side and a third much smaller one nearer to the base; the principal cusp is pointed. On the subsequent teeth the inner denticles disappear first, and gradually altogether, then the lower outer, while the upper outer remains, until at last it equals the principal cusp, so that the outermost teeth become almost regularly, though shortly, bicuspid.

The general anatomy does not offer any peculiarity requiring special notice. The nervous and digestive apparatus agrees with that of other ZONITIDÆ, except perhaps that the liver is enormously largely developed. The female portion of the genital system has a long sub-pedunculate receptaculum seminis, branching off at its origin. The vas deferens is very short, passing into a rather widened tube, again somewhat contracted near the base of the penis, which is attached by a special strong muscle. The end of the penis widens very rapidly for a short distance before it joins the hermaphrodite opening. I have not observed, in two specimens examined, any cœcal or calciferous appendages.

Genus. *TROCHOMORPHA*, *Albers.*

HELICEN, Edit. E. v. Martens, p. 60, and Preussische Exped nach Ost Asien vol. ii, Landschnecken, 1867, p. 245; *Nigritella* and *Videna*, ibidem. *Sivella*, Blauf.

The type of this genus is *Helix trochiformis*, Fér., which is characterised by a moderately solid, sub-discoid or depressedly conical shell, the whorls being flattened above, the last carinate at the periphery, the aperture rhombiform or narrowly semilunar with simple sharp edges, but the columella lips occasionally internally somewhat thickened and slightly reflexed.

I do not know whether the animal of this typical species had been examined, but I have observed those of about a dozen different species, which evidently belong to the same type, and I find that all of them possess a very fine glandular slit at the upper end of the foot, the pedal row being in all also distinct; they have, therefore, to be referred to the ZONITIDÆ, as already noticed in my paper on the Moulmain shells in Jour. A. S. B., vol. xl, pt. II, 1871, p. 225.

Judging from a somewhat more intimate examination of the animals of a few species, the following characters have to be added to those derived from the peculiar shape of the shell.

Animal moderately slender, with the posterior part of the foot shorter than the anterior, the former terminating above with a small glandular slit; pedal row distinct; mantle with elongated narrow neck lobes, but with the shell lobes entirely wanting, left neck lobe sometimes divided or insinuated in the middle; jaw smooth; genital organs without amatorial gland, or any other appendages; seminal receptacle and seminal duct very long.

The *Trochomorphæ* live on the ground generally in decaying vegetable matter, under or on old wood. Three species have been found on Penang.

Albers, while noticing several typical species, such as *T. planorbis*, Less., under his genus *Discus*, referred to *Trochomorpha* a most varied mixture of shells: for instance; *anceps*, Gould, *seirula*, Bens. etc. which belong to *Rotula*; *Barrackpoorensis*, Pfr., is a *Kaliella*; *caecuminifera* and *infula*, Bens. are *Sitalæ* (= *Conulema*, olim); *H. capitium*, Bens., does not belong to the present family, but to the next, the true *Helicidæ*, etc.

E. v. Martens (l. cit. pp. 246 and 247) adopted two groups in the genus *Trochomorpha*; the one, for which he proposes the name *Nigritella*, includes the obtusely conoid and more solid shells, sometimes with a somewhat obtuse periphery; these are true *Trochomorphæ*, of the type of *H. trochiformis*, or of *Troch. Ternatana*, Guillou; the name *Nigritella* is, therefore, entirely superfluous. The second group is classed by Martens as *Videna*, Adams; it includes the more planorboid and sharply keeled species of the type of *H. planorbis*, Less. For this same group, (type *H. castra*, Benson,) W. T. Blanford proposed the subgeneric name *Sivella*.

Judging from the similarity of the shells of these two groups and from what we know of the animal of *T. Ternatana*, observed by Martens, I very much doubt that any necessity exists for subdividing the genus *Trochomorpha*.

*TROCHOMORPHA CASTRA*, (*Benson*). Pl. i, figs. 14-16 and pl. ii, figs. 7-9.

*Helix castra*, Benson, Ann. and Mag. Nat. Hist., 1852, vol. x, p. 349.—Reeve, Conch. Icon., *Helix*, No. 1160.

The shell is subject to a very considerable amount of variation as regards the elevation of the spire. Young specimens are sometimes almost planorbular, and in some adults the total height of the shell is scarcely more than one-third of the larger diameter, while in others it somewhat exceeds one half of the same dimension. The width of the umbilicus varies from 0.2 to 0.3 of the diameter of the shell. The base is always distinctly spirally striated, but on the upper side the oblique transverse striae of growth prevail. The usual colour is pale horny, sometimes brown with a pale band below the suture.

The species is very rare on Penang hill, but it is common in Pegu, Arakan, Assam, Sikkim, and within the last few years it became abundant in the botanic garden near Calcutta, having been most likely introduced from Darjeeling. One of the largest Sikkim specimens in my collection measures: larger diam. 13, smaller diam. 12, height of shell 7, same of apert. 3, width of same 5.4 m.m.

The animal changes from dark leaden to blackish grey, being always paler at the sides of the foot, generally tinged with brownish below the pedal row; tentacles and pedicles mostly somewhat darker than the body; neck distinctly warty; sole dark grey, entire, without any distinct furrows; tail gland represented by a fine slit about one mill. long. The total length of the foot generally equals one and a half diameters of the shell, the caudal portion being always shorter than the anterior one. The mantle is blackish and in its extent above the large pulmonary cavity variegated with pale spots.

The jaw is smooth, very thin, almost semicircular, with broad oblique ends and a small, in younger specimens sometimes almost obsolete, projection in the centre of the concave edge; its width is about one half millimetre.

The radula is narrow, about two mill. long, or slightly longer, composed of about 85 transverse straight rows, there being about 101 teeth in each of them. All have very sharp, long and pointed cusps, the central with a small denticle on either side near the tip; on the outer ones, as they turn laterally and gradually decrease in size, the inner denticle disappears, while the outer increases, until on the last 15 or 20 teeth, preceding the 3 or 4 terminal ones, it equals the principal cusp. The last few teeth are short, broad, and their outer cusp becomes almost entirely obsolete, the teeth presenting merely an oblique sharp edge.

The female portion of the genital organs has a globular swelling near its origin at the hermaphrodite opening, and the receptaculum seminis

branches off above this gland, it is fully one inch long, somewhat thickened in the middle. The penis is attached by a short muscle, about 4 m.m. long and moderately thickened.

*TROCHOMORPHA CANTORIANA*, (*Benson*). Pl. i, fig. 13.

*Helix Cantoriana*, Benson, Ann. and Mag. Nat. Hist., 1861, vii, p. 85.

Five specimens which I found on Penang hill (at about 2000 feet elevation) exactly correspond with Benson's description, which was taken from a solitary specimen obtained by Dr. Cantor on the small island Sung-Sung near Penang. The illustration given on plate i will dispense with a repetition of the description quoted above. The apex is smooth, slightly swollen, and there are scarcely more than five whorls in specimens of 10 m.m.

The animal is blackish grey with a very narrow, pale dorsal stripe, quite similar to that of *T. castra*, but by some accident no specimen was preserved in spirit, so I cannot give any further details of its structure; it is, however, certainly a *Trochomorpha*. The specimens were found under a log of old wood.

*TROCHOMORPHA TIMORENSIS*, Martens. Pl. i, fig. 17, and pl. ii, figs. 10-12.

E. v. Martens, in Preuss. Ost-Asiat. Exped., 1867, II, p. 248.

Penang specimens, of which I obtained sixteen, entirely agree in form and structure with the shell described by E. von Martens, with the single exception that the last whorl is not descending near the aperture, but there is an inclination to it, as its terminal portion in adult specimens is slightly more bent downwards than the preceding part (comp. figs. 17*a* and 17*b*). This character is, however, certainly a variable one; it does also occasionally occur in adult specimens of *T. castra* and *T. planorbis*. The differences noticed by E. v. Martens regarding the greater number of whorls, and the larger umbilicus, with less rapidly descending sides, in *Timorensis*, when compared with *planorbis*, are well marked in Penang examples.

The species is found sparingly on or under old wood all over Penang hill; *T. planorbis* was not met with there, but it is a very abundant shell at the Nicobars.

The animal is uniform blackish, mantle more intense black; pedal row distinct and the edge of the foot below it nearly quite smooth; neck and sides covered with small warts; tail gland represented by a very fine slit, scarcely more than half a millimetre long.

The jaw and radula are quite similar to those of *T. castra*. The former is about three quarters mill. broad, with somewhat curved out ends and a broadly rounded central projection in the concave edge. The teeth are very slender, and the lateral denticles are very close to the tip on the centre tooth. The outer denticle descends a little lower down on the laterals, but it

always appears to remain smaller than on the corresponding teeth of *T. castra*; the outermost laterals were not observed, they must be very thin.

The genital organs are distinguished by a very great length of the seminal receptacle and of the seminal duct; the former is one and a half to nearly two inches long; it is somewhat widened near its origin but further on almost throughout equally thin.

*Fam. Vitrinidæ.*

*VITRINA NUCLEATA*, n. sp. Pl. i, fig. 12 and pl. ii, figs. 4-6.

Vit. testa depresso ovata, tumidula, tenui, pallide cornea, translucens; anfractibus 3·75, nucleo 1·5 anfr. composito, late conico, inflato, lævigato, duobus anfr. sequentibus ad suturam adpressis, subcanaliculatis, rapide accrescentibus, nitidis, transversim striis incrementi minutissimis notatis; apertura ampla, per-obliqua, labio undique tenuissimo, ad basin valde recedente, margine superno convexiusculo. Diam. maj. 9, diam. minor 7, alt. 5·3, alt. aperturæ 4·8, ejusdem latitudo 6·1 m.m.

A characteristically distinct species, by having the nucleus composed of one and a half whorls, conically tumid, while the next whorl is at its beginning only very narrowly exposed, or almost entirely covered. The outer lip is very thin, almost membranaceous, and simple throughout.

*V. nucleata* is one of the rarest Penang shells. I found three live specimens on the Penang hill in dense forest on old wood, about 1000 feet above the sea, and two more old shells at the base of the hill.

The animal is entirely black, only slightly paler at the front sides of the foot; it is very long and slender, its total length being about four times that of the longer diameter of the shell; the anterior part is the much shorter one, the posterior tapers into a point, and the whole is warty and grooved. The mantle, however, is nearly smooth. In quite fresh specimens the two shell lobes entirely cover the shell, but generally the left lobe covers a little more than one fourth of the last whorl extending from the margin of the mouth, while the right lobe also covers one-fourth of it beginning at the angle of the mouth, but at the same time also envelopes the whole spire. The neck lobes are also well developed, rounded, with simple edges, the left is much larger and longer than the right one. The sole of foot is pale brown, divided by two grooves in nearly three equal parts, of which the median is smooth and the lateral transversely sulcated. Pedal row well marked by a thin groove above and along the entire base of foot.

The jaw is semilunar, radiately finely striated, with a blunt projection in the centre of the concave edge; the outer or convex portion is smooth; it measures about 0·75 m.m. in breadth.

The radula is about two mill. long and half a mill. broad; there are 110 transverse, almost quite straight rows, but only 61 teeth in each of them.

All have very sharply pointed cusps, the central has two small lateral denticles on either side; on the outer ones these denticles almost entirely disappear.

The genital organs are distinguished by a great length of the uterus, at the end of which lies a large albuminous (*ag.*) and hermaphrodite gland (*hg.*). The seminal receptacle (*rs.*) is a long, pedunculated, spacious bag which includes a peculiarly twisted, horny organ, provided on the concave side with short crispate appendage. It is the same problematic organ which I described in *Sesara infrendens*, Gld., and *Macrochlamys* [*Durgella*] *honestæ*, Gld., (Comp. J. A. S. B. XL., Pt. II, p. 242 and 250, pl. xvi, fig. 5 and 6, and pl. xvii, fig. 13). Whether this structure represents the amatorial organ and whether that which we call a seminal receptacle really possesses the function which we attribute to it, appears to be as yet an open question. In the present species I found the terminal end of the so-called seminal receptacle filled with a milky substance, which under a high power exhibited a quite irregular flaky appearance.

In other respects the present species does not offer any anatomical peculiarities. The œsophagus is comparatively thin, long, cylindrical. The kidney, situated near the end of the rectum, is very large, of a broadly triangular shape; the liver enormously developed.

Some years passed the *Vitrinæ* had been classed as a subfamily of the *Helicidæ*; more recently they had been by various authors treated with the *Zonitidæ*, in the Oxygnathe group of *HELICACEÆ*. I think the older classification is preferable, as entered by Binney and Bland in their Land and Fresh-water shells of N. America. But I would prefer to give them, together with *Helicolimax*, *Hyalina* and their allies, a position intermediate between the two families. They combine indeed several of the characters of both. Although they do not possess a terminal mucous gland on the end of the foot (as all *Zonitidæ* do), they have a more or less distinct pedal row, and the sole appears to be often divided by longitudinal grooves. The jaw is entirely or partially finely transversely striated, not quite smooth, as usually in *Zonitidæ*, and not ribbed, as in true *Helicidæ*. However, the teeth, particularly the outermost laterals, have more the pointed character of the former than of the next family.

#### *Fam. Helicidæ.*

*TRACHIA*\* *PENANGENSIS*, n. sp. Pl. iii, figs. 1 and 18-20.

T. suborbiculata, alta, spira breviter elevata, obtusa, modice sed profunde umbilicata, tenui, fere cornea, cuticula luteo-fusca densæ et breviter pilosa induta, unicolore; anfractibus 4·5, convexis, sutura profunde subcanaliculata junctis, ultimo ad peripheriam uniforme convexo, ad aperturam paulo descen-

\* Compare, Stoliczka in Journ. A. S. B., vol. xl, Pt. II, 1871, p. 223.

dente, ad marginem umbilici obtuse angulato; apertura semilunari, labio tenui, labro expanso atque reflexo, ad insertionem umbilicalem paululum dilatato, ad basin indistincte subangulato, pallide violaceo tincto. Diam. maj. 16, diam. min. 14·5, lat. aperturæ cum perist. 8·8, ejusd. alt. 8·2 m. m.

As regards the thin, almost horny, fulvous, thickly and finely setose structure of the shell, this species is probably most closely allied to *T. erinacea*, Pfr., but it differs from it, as well as from two other very similar forms, *T. quieta*, Reeve, and *T. eustoma*, Pfr., by its conspicuously more elevated spire. Other species of similar type, like *T. breviseta*, Pfr., from Siam, *T. Helferi*, Bens., from the Andamans, and four or five others described by Pfeiffer and E. v. Martens have nearly all a more depressed form and mostly sub-angular last whorl, although their spire is somewhat elevated.

The animal is dark chocolate brown, with a very narrow pale dorsal and caudal stripe, the body is laterally somewhat more blackish in front, and tinged brownish behind; the posterior end of the foot is the shorter one, as in *Trochomorpha*, although not to the same extent.

The jaw is quadrant shaped, with about six strong ribs,\* and one or two less distinct ones on either side; it is 1·3 m.m. broad.

The radula is about 2·5 m.m. long., and 1. m.m. broad; there are 95 transverse rows, and 91 teeth in each of them, decreasing in size the more they approach the edges. The centre tooth is slightly smaller than the first laterals. All have a large basal plate, which is on the centre tooth slightly emarginate in the middle of the upper edge; this emargination increases in depth on the laterals, the inner branch remaining smaller, until on the last ones the upper edge becomes represented by two obtuse branches. The hook is on all teeth comparatively small, broad, with a moderately sharp point. On about the tenth tooth a small denticle appears to shew on the outer edge near the tip, becoming more distinct on the following teeth. After the eighteenth lateral, the teeth become somewhat more rapidly shorter, but increase in width until the last are wider than long, or high, and on these the basal plate has almost entirely become obsolete.

The genital organs are more than an inch long. The female portion has a long seminal receptacle, strongly thickened and muscular for some distance from its origin, then passing into a long thin tube and terminating with a moderately enlarged bubble, attached by very thin muscular fibres to the albuminous gland which is situated at the end of the uterus. The vas deferens takes its origin near the upper end of the uterus; it is attached by numerous thin threads at the hermaphrodite opening, and after a short distance enlarges into a muscular tube. At the beginning of this enlargement is a short pointed flagellum (f), and at the

\* Evidently very much like that of *Campylaea*.

other end, where the penis begins, is a retractor muscle. The penis itself has near its base a cœcal appendage; its terminal portion, before it joins the hermaphrodite opening, is very thin.

A comparison of the genital organs with those of *Trachia delibrata*, represented in J. A. S. B., vol. XL, Pt. II, 1871, pl. xvi, fig. 1, will shew, that the only essential difference consists in the presence of the small cœcal appendage on the penis in *T. Penangensis*. The jaw has fewer and less strong ribs, than that of the former species, but the teeth themselves are extremely similar.

Taking all these anatomical characters together with those of the shell, as noticed in my paper cited above, I think we can consider *Trachia* as a fairly established genus of the HELICIDÆ.

#### HELIX [FRUTICICOLA] SIMILARIS, Fér. Pl. ii, figs. 1-3.

Comp. E. v. Martens, in Preuss. Exped. nach Ost-Asien, vol. II, pp. 43 and 270, etc. Stoliczka in J. A. S. B. vol. XL, Pt. II, 1871, p. 224.

On Penang this species is mostly found in the coco-palm plantations up to a height of about 200 feet, never in the interior of large forests and at great elevations. The shells are of the usual small size (larger diam. between 12 and 13 m.m.), with or without a brown peripheral band. The striae of growth are generally fine, but in some specimens they accumulate to strong ribs which give the shell a very peculiar costate appearance.

I also obtained the species from Malacca, near Singapore, Hongkong, Chusan, Maccao, Canton, &c., northwards it extends through Tenasserim into Burma, where it is associated with a great number of closely allied species, some of which may prove to be mere varieties of it. I may mention *H. bolus*, *H. sculpturrita*, *H. Zoroaster*, &c.

In Bengal itself the species is not known, but in Central India it is represented by *H. propinqua*, and on the Andamans by *H. hemiopta*. Judging from the great number of closely allied species in the Indo-Malayan region, there is certainly the greatest probability that the original habitat of *H. similis* falls within the Indo-Malayan Archipelago, and that it has been introduced into Mauritius, China and South America.

The animal is rather slender, all over strongly warty, brownish fleshy white, or pale brown, the pedal row is very slightly indicated by a fine groove; the pedicles and tentacles are greyish white, mantle dull milky white with a slight vermilion tinge. When the animal is quite fresh the total length of the foot is equal to from two and a half to three longer diameters of the shell.

The jaw is semilunar, about 1 m.m. broad, with three strong central ribs, followed by a somewhat broader one on either side, while the next is only indicated by a faint dark line.



The radula is when compared with the size of the animal large, about 2·3 m.m. long, and somewhat more than one m.m. broad; it is composed of about 90 transverse rows, with 67 teeth in each of them. The central is much smaller than the adjoining laterals, with a long arched cusp. The laterals somewhat rapidly decrease in size after the 14th; on the outermost the basal plate gradually disappears, while the breadth of the teeth exceeds their length.

The genital organs are more complicated than in *Trachia*. The female portion has at its origin a rather short, thick muscular cœcal appendage, which most probably represents the amatorial gland; it is widened near its origin and at its rounded end. The seminal receptacle is a round bag, attached to a long thin peduncle of about the same length as the uterus. The seminal duct is moderately long, but the penis comparatively thick and attached by a strong muscle.

#### *Fam. Bulimidæ.*

##### BULIMUS.—Subg. *Amphidromus*.

The only two species which I found among the coco-palms were *Bulimus atricallosus*, Gould, and *B. interruptus*, var. *citrinus*; the uniform coloured greenish yellow variety. The former is the more common species.

Besides these two, the ubiquitous *Stenogyra gracilis* is by no means rare at the roots of palm trees.

#### *Fam. Clausiliidæ.*

##### CLAUSILIA (PHÆDUSA) PENANGENSIS, n. sp. Pl. ii, figs. 4-6 and 15-17.

C. testa fusiformi, plus minusve attenuata, medio ad anfractum penultimum latissima, non rimata, solidula, castanea, apice submamillata, albescente, anfractibus 9·5 ad 10·5, convexis, sutura simplici junctis, transversim confertissime striolatis, penultimo sensim attenuato; apertura ovata, intus castanea, peristomate modice expanso, undique libero, albescente, plica supera crassa, ad marginem aperturæ continua, columellari immersa, tenui, valde oblique intrante; plicis palatalibus six, prima longissimima, unam mill. a margine suturali distante, ceteris multo brevioribus, subæqualibus, modice curvatis atque fere æquidistantibus.

Var. *brevis*, exquisite fusiformis, vide fig. 6 et 6a; long. 24, lat. 6·2, apert. cum perist. 6 longa, 4·5 m.m. lata.

Var. *elongate* fusiformis, vide fig. 5; long. 26·3, lat. 6·2, apert. 6·9 longa, 4·7 m.m. lata; in hoc specimine apertura exceptionaliter longa est, in speciminibus alteris, forma similibus, longitudo aperturæ 6·2 ad 6·4 observanda.

Var. *exilis*, attenuate fusiformis, vide fig. 4 et 4a; long. 27, lat. 6, long. apert. 6·3, lat. 4·6 m.m.

*Hab.*—Penang hill, frequens.

This is an extremely variable species as regards the shorter or longer fusiform shape of the shell, and also as regards the size of the aperture, but both these variations are very commonly observed in other species of the genus, and particularly in the allied Malayan species *Cl. Gouldiana*, Pfr., *insignis*, Gould,\* and *Sumatrana*, Martens.† All three have a similarly variable shape, and finely striated, moderately convex, whorls, but in the two former the aperture is much shorter of a squarish shape, and in the last it is conspicuously longer; E. v. Martens gives its length at 8 m. m. in a specimen, the total length of which is from 23·5 to 31·5 m. m. In this last species, which also comes nearest to the Penang shell, the whorls appear to be slightly less convex and there are only five palatal plates present.

The animal is uniform grey covered with small pale brown warts, darker on the back, paler on the pedicles, which have very small, black eyes; tentacles very short.

The general anatomical structure agrees with that which I published of *Cl. Philippiana*, (comp. J. A. S. B., vol. xl, pt. II, 1871, p. 174, pl. vi, fig. 8).

The genital organs are distinguished by a very great length of both the uterus and the penis, both of which are much twisted. The only appendage is that of the seminal receptacle, which is comparatively small and narrow, situated at the end of a long peduncle.

The jaw is very short, about 0·5 m. m. broad, apparently smooth; only very faint radiating and concentric lines are to be observed in certain lights.

The radula is about 2 m.m. long and 0·5 m.m. broad; it consists of about 125 rows, with 61 teeth in each row. All are provided with a strongly curved cusp; after about the fifteenth tooth, they rather rapidly decrease in length. Towards the end of each row they become multi-serrated, while the basal plate almost entirely disappears. The last teeth are very short, but broad, almost linear and entire.

*CLAUSILIA* [*PHÆDUSA*] *FILICOSTATA*, n. sp. Pl. III, figs. 7-8.

*Cl. testa* fusiforme turrita, apice sensim attenuata, subrimata, tenui, pallide cornea; anfractibus 10 ad 11, lente convexiusculis, sutura simplici junctis, ad suturam filiforme marginatis atque infra marginem paulum contractis, transversim oblique dense costellatis, antepenultimo vix latiore quam penultimo, ultimo versus aperturam paululum contracto; apertura ovate subtrigona, postice, (aut supra), subangulata, peristomate expanso, undique libero, plica

\* J. A. S. B., xli, pt. II, pp. 203, 204, 208, pl. ix.

† Ost-Asiat. Exped., 1867, p. 379, pl. 22, fig. 17.

supera tenui, haud usque ad marginem peristomatis interni extensa, intus in fauce rapide evanescente, columellari approximata, fortiori, valde obliqua; plicis palatalibus circiter decem, supera longissima, a margine distante, duabus vel tribus sequentibus multo brevioribus, cæteris brevissimis, omnibus inter se irregulariter dispositis. Long. 21·2, lat. 4·4; long. apert. cum perist. paulo imperfecto 4·8, lat. 3·6 m.m.; specim. secundi apert. cum perist. perfecto 5·3 longa et 4 m.m. lata.

*Hab.*—Penang hill, cum precedente, sed rarissima.

This species is very closely allied to *Ol. Javana*, Pfr., but the latter has the whorls, particularly the middle ones, somewhat higher, the transverse costulation is a little finer, and more crowded, the palatal plaits are fewer, two according to Küster, three to four according to E. v. Martens; it also appears to have the two labial plaits stronger. I do not know any other species with which the Penang shell can be compared. It appears to be extremely rare; out of three specimens found only one has the aperture with the margins perfectly well developed.

### Fam. Philomycidæ

Binney and Bland, Land and fresh-water shells N America, pt. I, 1869, p. 294.

#### Genus. PHILOMYCUS.

1820. Rafinesque. Comp. 'Complete writings,' by Binney and Tryon, 1864, p. 64.

1821. Férussac, Tabl. syst. des Limaces, p. 14.

1823. *Meghimation*, Hasselt, Algem. Konst. &c., p. 232; *idem*, Fér., 1824.

1842 (August). *Incillaria*, Benson, Ann. and Mag. Nat. Hist. vol. ix, p. 486.

1842 (Septb.). *Tebenophorus*, Binney, Boston Journal, iv, p. 171, and 1844, Wyman, *ibidem* p. 410.

1866. *Philomycus*, (anatomy of) Keforstein, Zeitsch. Wissensch. Zool., vol. xvi, p. 183.

1866. *Incillaria* and *Meghimatium* (anatomy of), Keforstein, Malacoz. Bløtter, vol. xiii, p. 64.

1869. *Tebenophorus*, Binney and Bland, Land and Fresh water shells N. Am. pt. I, Pulm. Geoph., p. 295.

*Philomycus* apud H. and A. Adams, Chenu, E. v. Martens &c.

It must be admitted that the original characteristic of the genus by Rafinesque is a very unsatisfactory one, but that is the case with many other old definitions. When Rafinesque wrote that *Philomycus* has no visible mantle, everybody\* could, I think, fancy that the mantle must extend over

\* Binney writes in 1841 (Boston Journ. IV, p. 174) of his *Philomycus dorsalis* corpore .....clypeo nullo,' and on p. 171 of *Tebenophorus carolinensis* 'clypeo lato et elongato, dorsum integrum vestiente,' and still both species have the mantle covering the entire upper surface of the body, and both are *Philomycus* (or *Pallifera* of Morse).

the whole body, if the animal can at all be closely compared with *Limax*, or else it could not be a Mollusc at all. This was indeed well understood by Férussac, who in the next year referred to *Philomycus*, besides the four insufficiently described species of Rafinesque, *Limax carolinensis* of Bosc, well known from description and figure, (copied in Hist. nat. des Moll., pl., 6, fig. 3). And as Rafinesque's species had not been rediscovered and his descriptions not made more complete, *Ph. carolinensis* remained to be considered as the type of the genus, though I do not think that there can be much doubt on the point, that Férussac had correctly interpreted Rafinesque's meaning. In any case there was no sufficient ground for introducing the name *Tebenophorus* for the same species.

Keferstein (loc. cit.) has shewn by the anatomical examination of the three typical species, *Philomycus carolinensis*, (seu *Tebenophorus*), *Meghimatium striatum* and *Incillaria bilineata*, that all three genera have to be united into one. The general anatomy and dentition &c., agree in all, the only traceable distinction of *Phil. carolinensis* consists in the presence of a small amatorial organ, situated at the entrance of the seminal receptacle. The presence or absence of this organ, or even of that of a special amatorial gland (see ante, p. 13), is rightly considered by Keferstein as insufficient for a generic separation of the American from the Indian species. I had repeatedly opportunity of satisfying myself of this by the observation, that the development of that organ does not only appear to depend upon the age of the animal, but often even upon the season or peculiarities of the conditions, under which the animal lives. As far as our materials enable us to judge, we can, I think, look upon *Philomycus* as a well established genus. For the present it has to be regarded as the sole representative of the family. The finely radiately striated (in *Ph. dorsalis* coarsely ribbed) jaw in part resembles that of the VITRINIDÆ, but the dentition has decidedly more the character of true HELICIDÆ.

I have to notice one new species found on Penang.

*PHILOMYCUS PICTUS*, n. sp. Pl. III, figs. 9-14.

*Ph. corpore tenuiter cylindraceo, plus minusve (35 ad 46 m.m.) extenso, antice rotundate subtruncato, postice acuminato, livido, copiose mucoso, suprâ pallio lævigato, lateraliter atque in parte postica nonnunquam subgranuloso tecto, fasciis tribus longitudinalibus atratis, reticulationibus ejusdem coloris junctis, picto, faciâ centrali latissimâ, duabus alteris tenuioribus ad latus dorsi sitis et a margine inferiore distantibus; orificio pulmonari antice ad latus dextrum in incisione pallii sito, circiter 5 ad 7 m.m. a terminatione antica distante; pedunculis oculiferis circ. 5 m.m. longis, tentaculis brevissimis, ambobus pallidissimis; pede infrâ transversim plicatello, livido.*

During life the length and comparative thickness of the animal changes very rapidly, as may be noticed from a comparison of the two sketches taken from life and one from a specimen preserved in spirit. The animal is covered by a thick layer of mucous secretion, it is very active, and readily burrows in light decomposing vegetable substance. The three black longitudinal bands are connected by a similarly coloured net work which continues, interspersed with, or dissolved into, little dots, to the lower edge of the mantle. The three distinctly marked bands distinguish the present species from the Javaen *Ph. reticulatus*, according to Férussac's figures 2\* and 3 on pl. 8 E., p. 96\*, Moll. terr. et fluv. vol. ii. The peduncles are about 5 m.m. long, provided with distinctly developed globules on which the small black eyes are situated; the tentacles are very short, and when the animal moves about scarcely noticeable; both are very pale coloured.

The anatomy of the species almost perfectly agrees with that given by Keferstein of *Ph. striatus* and *bilineatus*. The internal pulmonary cavity extends to about one anterior fourth of the length of the body, and in the fresh animal is always well marked by the mantle above it being somewhat inflated. On this inflated portion, the mantle is smooth, on the other parts generally slightly rugose.

The genital organs (comp. fig. 13) have no special amatorial gland. The seminal receptacle is a globular pedunculated bag, situated a short distance from the hermaphrodite opening. In two specimens which I examined, I noticed the development of a strongly fibrous bundle of muscles at the entrance of the receptacle, where it branches off from the oviduct, but there was no special amatorial organ present.

The jaw is semilunar, strongly curved, thin, radiately striated; when laid flat about one mill. broad.

The radula is 2·8 m.m. long, only about 0·5 broad; there are about 170 rows; and 87 teeth in each row: the central tooth with a symmetrical simple curved cusp, the laterals with a more oblique but simple cusp, both it and the basal plate gradually decrease in height until the last teeth become almost linear and form a confluent row.

None of the other organs require any special notice.

I found three specimens of this species among old decaying vegetable matter on the ground at the northern base of Penang hill, about one hundred feet above the sea.

\* E. v. Martens (Preuss. Exp. nach Ost-Asien, Landschnecken, p. 182) refers to this figure as a synonym of Hasselt's *Parmacella reticulata*, which he quotes as *Parmarion reticulatus*. I do not know Hasselt's original figure, but surely the one given by Férussac does not represent a *Parmacella* or a *Parmarion*.

*Fam. Pupidæ.*

This family is represented in India and Burma by *Hypselostoma*, *Boysia* and various subgenera of *Pupa*, all of small size. Among the *Pupæ* found in Burma and the adjacent countries, inhabited by a large number of Malayan forms, the majority are referable to Albers' subgenus *Scopelophila*, the type of which is *Pupa Kokeilii*, Rossm. The shells are small, subconic or subcylindrical, composed of 4 to 8 whorls, with a moderately thin, semicoraneous or corneous texture, covered by a brown cuticle; the last whorl is rimate at the base, always somewhat rapidly turned to the front, generally slightly ascending at the aperture, which is internally instructed with teeth on the whole peristome; commonly there is a bifid tooth on the inner lip, it is larger than any of the others. Some of the species appear to differ from *Pupilla* merely by the peculiar turn of the last whorl towards the front, thus shewing a strong affinity to *Hypselostoma*. The Indian species of *Scopelophila*, as far as I observed them, have the pedicles well developed and the tentacles short.

A second small group of *Pupa*, which is found in India, Burma and the country southward, is characterised by a subconic or ovate shape, composed of three to five whorls, of a thin corneous texture, covered with a transversely striated cuticle; the last whorl is not ascending, the aperture generally edentulous; the columellar lip is externally near its attachment somewhat expanded, mostly covering the umbilical region, while internally at the base it is twisted and occasionally provided with a small tooth. I propose for this subgeneric group the name

*Pupisoma*,

and regard as the type of it the Moulmein *P. lignicola*, described in J. A. S. B., vol. xl, pt. ii, p. 171, pl. vii, fig. 3. The animals have very short pedicles and barely a trace of tentacles. They generally live on wood.

## PUPA [SCOPELOPHILA] PALMIRA, n. sp. Pl. II. fig. 3.

P. testa ovate cylindracea, rimata, sordide albida, cornea, apice obtusiuscula; anfractibus quinque, convexis, gradatim accrescentibus, sutura simplicijunctis, sublævigatis, fere politis, lineis nonnullis incrementi transversis obliquis, exilissimis notata; apertura fere verticali, subquadrangulari, intus quinque-dentata, albida; labro undique expansiusculo atque paulum incrassato, extus infra suturam sinuoso, intus profunde bidentato, (dente superno minori), ad basin dente unico minuto et ad medium collumellæ altero fortiori instructo; labio tenui, adnato, extra medium prope angulum posteriorem aperturæ dente lamelliforme bipartito munito.

Long. testæ 2·15, latit. 1', long. apert. 0·8, lat. 0·6 m.m.

*Hab.*—Penang et in Provincia Wellesley dicta, sub corticem *Cocos nucifera*; testa rarissima.

This is of exactly the same type as the Arrakanese *P. filosa*, described at p. 333 of the Journal for last year, but it is larger, more cylindrical and has one tooth more in the aperture. From *P. Avanica* it differs by less closely wound whorls and by the interal dentition of the aperture.

It appears to be a very rare species. I found one specimen under the bark of a cocoa-nut tree on Penang, and two others on the opposite coast in the Wellesley Province.

PUPA [PUPISOMA] ORCELLA, n. sp. Pl. II, fig. 2.

P. testa subglobose conoidea, apice obtusa, angustissime perforata, tenui, cornea; anfractibus 3·5, valde convexis, sutura simplici junctis, transverse flose striolatis; apertura subrotundata, paululum obliqua, edentula; margine externo tenuissimo vix repandiusculo, columellari albescente, vix torto, supra reflexo, umbilicum fere omnino obtegente.

Alt. testæ 1·7, diam. 1·25, alt. aperturæ 0·6 m.m.

*Hab.*—Penang, sub corticem *Cocos nucifera*, haud frequens.

The animal is grey with dusky pedicles, but no perceptible trace of tentacles. The species differs from *P. lignicola* (l. cit.) by a shorter and broader form, more convex whorls, and by a very slightly expanded and thin outer lip. In fresh specimens some of the transverse striæ of the cuticle are rather stronger than others, but they very soon wear off.

#### *Fam. Streptaxidæ.*

This family is represented by the single species *Ennea bicolor*, occurring with *Stenogyra gracilis*, though not very commonly. (Comp. J. A. S. B., 1871, vol. xl, pt. ii, p. 169).

#### *Fam. Veronicellidæ and Vaginulidæ.*

I have collected two species, which are by authors usually referred to the genus *Vaginulus*, and with which Blainville's *Veronicella* is considered as identical.

The one species is the same as *Vaginulus Birmanicus*, briefly described by Theobald in Journ. A. S. B., vol. xxxiii, for 1864. It is found about Calcutta, extending throughout Bengal up to the base of the Sikkim hills, through Arrakan, Tenasserim to Penang. A specimen obtained at Singapore does not appear to differ; E. v. Martens' *V. Hasselti*, (Preuss. Exp. Ost-Asien, Landschnecken, 1867, p. 176, pl. 5, figs. 2 and 4) from Sumatra, Borneo, &c., also appears to be the same, and it seems to me very probable that it is the true *Onchidium molle* of Hasselt.

A second species is very closely allied to *Vaginulus Thurannensis*, Eydoux and Souleyet, (*Voyage de la Bonite*, pl. 28, figs. 4 to 7), found by Mr. Gaudichaud at Touranne in Cochin China.

A close examination of various eastern species of what authors usually call *Vaginulus* or *Veronicella* appears to me to indicate, that a great confusion has been brought about into the definition of these terms. First of all, we have to return to the typical species of those two generic terms, leaving all subsequent researches regarding other species out of the question.

Blainville's description of his *Veronicella laevis* in 1817 was incorrect as regards the existence of a rudiment of a shell. The mistake was, at least partially, corrected by Blainville in *Dict. d. Sc. Nat.* vol. 57, p. 348,\* and Keferstein, after discussing the opinions about this genus, in *Zeitsch. Wiss. Zool.*, xv, 1864, defined† *Veronicella* as it ought, I think, to be accepted.

The animals have the sexes distinct in one individuum, the male organ under the right peduncle, the female about the middle of the lower right side of the mantle; tentacles bilobed; the anal and respiratory orifices are at the posterior end; the jaw and teeth of the radula resemble those of the *HELICIDÆ*. Thus the general anatomical structure of *Veronicella* agrees in some respects with *Onchidium* (comp. Stoliczka in *J. A. S. B.*, xxxviii, pt. ii, 1869, p. 88, pl. xiv), but in this genus the female genital opening lies with the two others at, or close to, the posterior end; the teeth are peculiarly hook-shaped, and there is no jaw present. As one of the characteristic figures of a *Veronicella* I may mention *Vag. Solea*, d'Orb., (*Voyage dans l' Am. merid.*, *Moll.* pl. 21) from Buenos Ayres, or *Vag. Luzonicus*, Eydoux and Souleyet, in *Voyage de la Bonite*, *Zoologie*, vol. II, p. 495, pl. 28, figs. 1—3. Thus our species will have provisionally to stand as

#### VERONICELLA BIRMANICA, (Theob.).

It is found all over the island, up to the top of Penang hill, but is not common, and the specimens are mostly small, about 1 or 1.5 inches. The median dorsal pale stripe generally becomes distinct only in older specimens, and the lower side of the mantle is uniform livid; in very young specimens the pale stripe is absent, and the mantle marked below with dark dots.

The name *Vaginulus* was introduced by Férussac in 1821. Judging from the description of the genus, in part at least, from the arrangement of the species and from the anatomical account given by Blainville, it is, I

\* In this article, Blainville strangely makes a great mistake in considering *Vaginulus*, *Veronicella* and *Onchidium* as identical.

† Comp. also Humbert in *Mem. Soc. Ph. & Sc. Nat. Genève*, vol. xvii, and *M. v. Martens Preuss. Exped.* p. 175, *Vaginulus*.



think, clear, that Férussac considered the first described species, *V. Taunaysi* as the type of the genus, (Comp. Moll. terr. and fluv., II, pp. 96 p, 96q, and explic. des pl. No. 13, pl. 8 c.). Férussac's characteristic of the genus places the pulmonary opening at a distance of two-fifths of the length of the body from the anterior end, and on the lower right side of the mantle; the female sexual opening is said to be on the same side, about the middle; the position of the anus is not mentioned. Blainville's account of the anatomy is not clear and partly contradictory to Férussac's statement. Some of the figures appear to leave no doubt that the position of the female sexual organ is the same as that indicated by Férussac, in others (fig. I and III,) its situation is too much backward. The anus appears to be situated according to figure I near the sexual opening, but again it is said to terminate with the anus at the posterior upper end of the foot. In the figures II and III (l. cit.), which give an insight into the whole anatomy of the animal, the true termination of the intestines is nowhere given. All this is very unsatisfactory.

Eydoux and Souleyet in their figure of *Vaginulus Tourannensis* also record a small opening at the posterior lower right end of the mantle. I can scarcely believe that this is correct; it is probably only a fault of the artist who thought that an opening must exist there, because it is clearly seen in the other species on the same plate, *Vag. Luzonicus*, which is a *Veronicella*.

My reason for doubting the correctness of Eydoux and Souleyet's figure is the very careful examination of the Penang species, which, as already mentioned, is closely allied to *V. Tourannensis*, if not really identical with it.

The Penang species has the following generic characters, as compared with those of *Veronicella*.

The sexes are distinct, the male opening is under the right peduncle, the female sexual opening lies, together with the anus and the pulmonary orifice, at the lower right side of the mantle, about two-fifths of the length of the body distant from the front. The sexual opening is nearest to the edge of the foot, then comes the anal and then the respiratory one; they are only separated by thin laminæ from each other. There is no jaw present, the manducatory organ consisting of a simple muscular tube, much as in *Streptaxis* or *Testacella*; the radula is short, composed of simple pointed teeth which are absolutely identical with those of the two last mentioned genera. There is no opening whatsoever at the posterior end of the foot or mantle; the pointed end of the intestinal organs is only attached by a bundle of muscles to the terminal inner surface of the mantle.

On p. 96r of Férussac's Moll. ter. and fluv., Blainville says that the upper

border of the mouth is provided with a dental comb ('peigne dentaire'), and further on, that the buccal cavity is supplied on its inner upper surface with very small sharp points ('très petites pointes acérées'). The latter statement evidently refers to sharp pointed teeth of the radula, but does the former mean to indicate the presence of a jaw, such as exists in *Veronicella*? This is a question of great importance; for if the presence of a jaw can be proved, it would certainly not support the generic identification of our Penang *Vaginulus* with *Vag. Taunaysii*.

There are also a few peculiarities in the other anatomical structure, but on the whole this latter well agrees with that given by Blainville of *Vag. Taunaysii*, with the exception of one or two organs which he evidently misinterpreted.

My doubts against a generic identity of *V. Taunaysii* with *Veronicella*, as formerly defined, appear to me to be supported also by external differences in the shape of the body. In *V. Taunaysii*, as well as in the Penang species and in *V. Tourannensis*, the body is slender and high, so to say nearly cylindrical, the globules on the tentacles are well developed, the appendages of the latter large, the posterior end of the foot is pointed and somewhat projecting beyond the termination of the mantle. In *Veronicella*, on the contrary, the body is more depressed and of a generally more ovate shape, the lower appendage on the tentacles is smaller than the tentacle itself, the end of the foot is more rounded and not, as a rule at least, projecting beyond the termination of the mantle.

E. v. Martens, when speaking of *V. Taunaysii* (Preuss. Exp. nach Ost-Asien, Landschnecken, p. 6), says that the slight lateral expansion of the mantle and the higher body distinguish it from all other species collected in India, and this opinion is, I think, strongly in favour of my presumed distinction between *Veronicella* and *Vaginulus*; for it also exactly applies to the Penang species.

Finally, I must draw the attention to the remarkable external similarity in the form of the body of *Vaginulus porulosus*, Fér. (Moll. ter. et fluv. II, p. 96', pl. 8 E, fig. 5) with that of *Testacella*. The former species is recorded after a drawing communicated to Férussac by van Hasselt, and is no doubt from Java or one of the adjoining islands. I think it represents a true *Vaginulus*, and not a *Veronicella*.

I have placed the above discussion before my malacological friends, because I consider a satisfactory solution of the points in question of considerable importance. The information is not easily obtainable, as the necessary materials are very much scattered about. If my suppositions prove correct, the so called AGNATHA group, and especially the TESTACELLIDÆ or STREPTAXIDÆ, will appear before us in a quite different light, when compared with the other

groups. They will shew that certain characters remain constant under different physical conditions, while others change, and that the change takes place according to certain principles, affecting similar or the same organs. Extended observations of this kind must give us the key to a correct systematic arrangement.

Our special question cannot be solved, unless Blainville's and Férussac's somewhat contradictory accounts of the structure and anatomy of *Vaginulus Taunaysii* had been satisfactorily settled. I hope to have myself an early opportunity of examining one of these animals, and until such a time I will postpone the detailed description of the Penang species, (and of another new one from Sikkim), together with their anatomy, which requires a careful comparison with that of *Vaginulus* and *Onchidium*, of each of which I will have to describe several interesting new forms.

### *Explanation of plates.*

#### Plate I.

- Figs. 1—3. *Rhysota Cymatium*, (Benson), p. 11; a young, an adolescent and an adult shell.  
 „ 4—7. *Rotula bijuga*, n. sp., p. 14; four full grown specimens, variable in the height of the spire.  
 „ 8. *Sitala carinifera*, n. sp., p. 16; 8, natural size; 8a, 8b, 8c, enlarged views.  
 „ 9. *Macrochlamys stephoides*, n. sp., p. 17; three views in natural size.  
 „ 10. *Microcystis palmicola*, n. sp., p. 18; 10, natural size; 10a, 10b, 10c, three views enlarged.  
 „ 11. *Helicarion permolle*, n. sp., p. 18; 11, twice the natural size; 11a, 11b, 11c, 11d, views in natural size.  
 „ 12. *Vitrina nucleata*, n. sp., p. 23; 12, front view in twice the natural size; 12a, 12b, 12c, three views in natural size.  
 „ 13. *Trochomorpha Cantoriana*, (Benson), p. 22; three views in natural size.  
 „ 14—16. „ *castra*, (Benson), p. 21; 14, 14a, 14b, three views in natural size; 15, side view of a specimen from Calcutta; 16 and 16a, top and lower views of a Darjiling specimen.  
 „ 17. *Timorensis*, Mart., p. 22; four views in natural size.

#### Plate II.

- Figs. 1—3. *Fruticicola similis*, Fér., p. 26.  
 „ 4—6. *Vitrina nucleata*, Stol., p. 23; 4a, represents the side view of the problematic amatorial organ enclosed in the *bursa seminalis*.  
 „ 7—9. *Trochomorpha castra*, (Benson), p. 21.  
 „ 10—12. „ *Timorensis*, Mart.; p. 22.  
 „ 13—15. *Rhysota cymatium*, (Bens.); p. 11.  
 „ 16—18. *Rotula bijuga*, n. sp., p. 14.  
 „ 19—20. *Macrochlamys stephoides*, n. sp., p. 17.  
 „ 21—30. *Helicarion permolle*, n. sp., p. 18.

All the figures are enlarged; the measurements in natural size are given in the text referred to.

## Plate III.

- Figs. 1. *Trachia Penangensis*, n. sp., p. 24; three views in natural size.  
 „ 2. *Pupa* [*Pupisoma*] *orcella*, n. sp., p. 33; 2, natural size, 2a, 2b, enlarged.  
 „ 3. *Pupa* [*Scopelophila*] *palmira*, n. sp., p. 32; 3, natural size, and two views enlarged.  
 „ 4—6. *Clausilia* [*Phædusa*] *Penangensis*, n. sp., p. 27; 4, 4a, attenuated var.; 5, elongately fusiform var.; 6, 6a, fusiform variety; all figures in natural size.  
 „ 7—8. *Clausilia* [*Phædusa*] *filicostata*, n. sp., p. 28; views of two different specimens in natural size.  
 „ 9—14. *Philomicus pictus*, n. sp., p. 30; 9, 9a, 9b, three views taken from a specimen in spirit; 10 and 11, two views of the same specimen in different states of expansion, taken from life; all these figures are in natural size, but the other figures, representing the genital organs, the jaw and teeth, are enlarged.  
 „ 15—17. *Clausilia Penangensis*, vide p. 27.  
 „ 18—20. *Trachia Penangensis*, vide p. 24.

## Explanation of the letters used on pl. II and III.

- ho = hermaphrodite opening.  
 ut = uterus.  
 al = albuminous gland.  
 vd = vas deferens.  
 ag = amatorial gland.  
 p = penis.  
 m = retractile muscle.  
 rs = receptaculum seminis.  
 po = pulmonary opening.  
 an = inner, or posterior, angle of mouth.  
 pn = peripheral angle.  
 u = umbilicus.  
 rs = right shell-lobe.  
 rn = „ neck lobe.  
 ls = left shell lobe.  
 ln = left neck lobe.

The small letters below the teeth refer to the distance of each tooth from the respective central tooth in each series.

ON *NEPHROPSIS STEWARTI*, A NEW GENUS AND SPECIES OF MACRUBOUS CRUSTACEANS, DREDGED IN DEEP WATER OFF THE EASTERN COAST OF THE ANDAMAN ISLANDS,—by JAS. WOOD-MASON.

(Read 7th August, 1872, received 16th January, 1873).

[With plate IV.]

In April of last year, I was deputed by the Trustees of the Indian Museum, with the sanction of the Government of India, to proceed to the Andaman Islands for the purpose of making a collection illustrative of the marine fauna of that part of the sea of Bengal in which those islands are situated. I reached Port Blair about the 6th of April, and immediately put myself in communication with the Chief Commissioner, who at once placed at my disposal a well-manned boat and a small steam-launch, with which I dredged for nearly two months with much success from low-water line down to near 50 fathoms. Towards the end of my stay, General Stewart knowing my intense desire to try my fortune in deeper water, placed at my disposal for one day the S. S. "Undaunted" which had been recently armed and put into commission for service as a guard ship. The time allowed was short, but sufficiently long to enable me to bring away samples of the life supported by the sea-bed at, and beyond, the 100 fathoms' line, and to ascertain that the sea-bed was uniformly covered with a thick deposit of fine olive-coloured mud derived from the waste of the coral-reefs and of the sandstone and serpentine rocks of the islands.\* This mud was not very productive, yielding only a few annelids, but was crowded with dead shells of Pteropods and *Dentalium* and with fragments of a large Brachiopod.

It was in the last cast of the dredge that I had the good fortune to capture the interesting addition to the crustacean fauna of these seas, described in the following pages. It is closely allied to *Nephrops Norvegicus* of northern European seas, so closely allied, indeed, that were it not for the absence of the squamiform appendage of the antennæ, I should be under the necessity of placing it in the same genus as a second species. The absence of this appendage, however, leaves me no choice but to establish a new genus for its reception.

\* The following rough analysis by Mr. Tween, the chemist of the Geological Survey of India, will show the proportion of insoluble matter :

Soluble in H Cl mostly Ca O Co <sub>2</sub> , .....	42.8
Insoluble clay and sand, .....	57.2

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100.0

The discovery in these warm seas of a very near, of the nearest ally in fact, of so characteristic a cold-water species, remarkable though it is, will not appear so surprising when I mention the fact that my crustacean lived and burrowed in the mud of the sea-bed at a depth of nearly 800 fathoms in a temperature not certainly exceeding 50° Fahr.

One of the chief points of interest attaching to this new form lies in the loss of its organs of vision by disuse, as in *Calocaris MacAndrewæ*, Bell, in *Cambarus pellucidus*—a member of the same family as that to which *Nephropsis* belongs—and in the other crustaceans and animals inhabiting the caves of Carniola and Kentucky. I not only agree with Mr. Darwin\* in attributing the loss of the eyes to disuse, but I also regard the great length and delicacy of the antennæ, and the great development of the auditory organs as modifications effected by natural selection in compensation for blindness.†

#### NEPHROPSIS, gen. nov.

Diag. *Antennal scale absent.*

#### NEPROPSIS STEWARTI, sp. nov. Pl. IV.

Body covered with fine rounded tubercles and with a short but dense pubescence. The carapace is sub-ovoid, armed on each side, just externally to the base of the rostrum, and behind the anterior margin, with an acute forwardly directed spine; a similar spine springs from each side of the anterior margin itself at about the level of the upper surface of the antennal peduncle; the basis of each of these two spines is confluent with a conspicuous convexity to be seen just behind it; immediately in front of each of these convexities lies a smooth, slightly excavated surface bounded in front by a curvilinear row of tubercles. The cervical suture, dividing the carapace into an anterior or cephalostegal, and into a posterior or omostegal portion, is broad and deeply impressed mesially and laterally, until it reaches the level

\* Origin of Species, 5th Edit., pp. 171-173.

† Since these remarks appeared in the abstract of my paper (Proc. Asiat. Soc. Ben. viii, 1872, p. 151) Dr. Hagen's Monograph of N. American *Astacidae* has reached Calcutta, and from it I give the following extract, on account of its obvious applicability to the species here described, merely remarking that the perusal of it led me to note also the stoutness of the rostrum and the great development of the cephalostegal spines in *Nephropsis* as compared with the slenderness of the one and the minuteness of the others in *Nephrops*: "But it seems to be a somewhat well recognized law in nature (Rathke, Metamorph. Retrograd., p. 135) that if any part is atrophied, or stopped in development, the nearest parts show an abnormal increase of development. This is apparently the case in *C. pellucidus*; the eyes are atrophied, and the rostrum, the fore border of the cephalothorax, the antennal lamina, the basal joint of the inner antennæ, and the epistoma are altered or largely developed." Op. Cit. 34.

of the anterior margin of the epistoma when it bends boldly upwards and backwards upon itself passing into the well-defined semicircular depression that bounds the lateral convexities described above. The cardiac region is broader than long, very convex transversely and bounded on each side by a densely-tuberculated elevation which running backwards, downwards, and forwards along the line of the granulated rim of the branchiostegite, and finally bending upwards almost opposite the origin of the second pair of abdominal appendages, passes again into the swollen anterior boundary of the omostegite; the ovoidal area thus limited off is more sparsely beset with tubercles and presents a marked depression on its anterior half.

The rostrum carries on each side a most acute spine directed upwards and forwards, and curved slightly inwards; and above presents two roughly granulated ridges coalescent towards the tip but divergent at the base; beyond the spines it is canaliculate on each side, above and below, and each lateral ridge is fringed with long hairs; below it is carinated and coarsely granulated at the base. A faint linear impression, continuous with the groove between the ridges on the rostrum, passes along the middle line of the carapace almost to its posterior border; situated in this line, and marking the anterior limit of the convex gastric region, lies an almost erect spiniform tubercle.

*Antennæ and antennules.*—The peduncles of these appendages lie as in *Nephrops Norvegicus* in the same horizontal line, and their inner margins are ciliate. The basal joint, or coxocerite, of the former is extremely short, and wants the apical spine in *Nephrops*, but the perforated conical process on its inferior surface is remarkably salient; the second is devoid both of the prominent spine into which, in *Nephrops*, its distal and external angle is produced, and of the squamiform appendage or scale seen in all the other recognized genera of *Astacidae*,\* and developed to such an extraordinary degree in Carideous Crustacea; one or two small folds or impressions between, or upon, the second and fourth joints being all that remains of the antennal scale, and of the rudimentary joint that in *Nephrops* corresponds to the moveable spine of *Astacus*.†

\* The antennal scale in *Astacoides* escaped the notice of Guérin who founded his genus on its supposed absence.

† There appears to be no doubt but that the antennal scale is the representative of the outer of the two appendages borne upon the protopodite at an early stage of embryonic life, and, if the moveable spine in *Astacus* and its undoubted homologue in the antennæ of *Nephrops* represent the inner of these appendages, then must the three distal joints of the peduncle with the flagellum be looked upon, as Dr. Fritz Müller looks upon them, as a new formation (*Neubildung*) and no longer as being in serial homology with the five distal joints of the other appendages, e. g., of an ambulatory leg, which represent the endopodite, the exopodite being completely aborted or represented at most, as Rolleston remarks, by the annular constriction on

The flagella of the antennæ are remarkably long and of excessive fineness at their extremities.

The basal joint of the antennules has its upper surface greatly inflated, owing to the remarkable development of the auditory organ to which, in most Podophthalmatous Crustacea at any rate,\* this joint gives lodgment; and the almost globular appearance of the joint as seen from the side contrasts strongly with the flatness of its upper surface in *Nephrops* or *Astacus*. Of the two remaining joints of the antennular peduncle, the first is short and cylindrical, being less than half the length of the last which in *Nephrops* is short and equal to that which precedes it. The peduncle terminates in the usual manner in a double flagellum, the outer branch of which is conspicuously stouter than its filamentous and cylindrical fellow, perceptibly compressed, and thickly fringed below with short hairs along its distal third.

The *epistoma* is much the same as in *Nephrops*, save that its posterior edge is straight and presents two small tubercles which give it the appearance of being slightly roundly-emarginate in the middle.

The *external maxillipeds* and the parts of the mouth in front of them are identical in structure with those of *Nephrops*.

The *eyes* are completely rudimentary, neither pigment nor corneal membrane being developed; the peduncles indeed are present, but even these are short, subcylindrical, mere aborted structures, concealed entirely from view by the stout base of the overhanging rostrum; in spirit they have become perfectly blanched like the rest of the appendages, but in life the delicate rose-pink coloration of the animal extended itself to their very tips. The peduncles are far less conspicuous from the side view than represented in the plate.

The first pair of *abdominal appendages*, those which bear the great *chelæ*, are unfortunately absent, the specimen having lost its claws a considerable period previous to its capture, as the presence of uncalcified reproduced rudiments of these appendages indicates; the other legs are smooth and slender; the second and third pairs are didactyle; of these the former has both its upper and lower margins, from the base of the carpopodite to the extremity of the claws, fringed with long hairs; the latter, much the slenderer as well as the longer of the two, has its propodite greatly elongated, and its claws only are ciliated. The fourth pair, the longest of all and ciliated only on the outer face of the dactylopodite, and the fifth, about as long as the second pair, are monodactyle.

the ischiopodite. For the facts relating to the transformation of the embryonic exopodite into the antennal scale of the Prawn *pari passu* with the budding out of the flagellum and the abortion of the endopodite, *vide* Fritz Müller's admirable essay on the development of the crustacea entitled "Für Darwin," p 41, fig. 31.

\* The caudal car of *Mysis* forms an exception to this.



The last abdominal somite is immoveably united to that which precedes it as in *Nephrops* and the common Lobster;\* and the sternum is linear as in the *Astacidae* generally.

*Post-abdomen*.—The post-abdomen is gradually attenuated to the extremity of the telson. The appendages of its first somite are as completely rudimentary as they are in the female of *Nephrops Norvegicus*;† those which follow are long and slender, their foliaceous branches being very narrow, produced to a sharp point, and fringed with excessively long cilia. All the terga are covered with minute rounded tubercles, and present at their anterior ends, just behind the tergal facets, a broad smooth transverse groove with its hinder margin convex backwards.

The pleuron of the first somite is precisely similar to that of *Nephrops Norvegicus*, but those of the remaining somites are even more acutely triangular than in that species, and have their margins denticulate and furnished with a fringe of long cilia. In all the somites, with the single exception of the first, the tergal and pleural regions are most sharply defined as such, the former not curving continuously with the latter but terminating abruptly at the level of the ventral chords in a line convex outwards; so that, if a somite were detached, deprived of its ventral chord and flattened out on the table with its dorsal surface uppermost, the imaginary continuation from pleuron to pleuron of the plane in which these pleura laid, would pass below that of the surface of the tergum.

The ‘swimmeret’ constituted as in all other Macrurous Crustacea by the highly modified and backwardly placed appendages of the last postabdominal somite and by the ‘telson,’ differs in no particular of more than specific value from that of *Nephrops*; the mesial element, or telson, is longer in proportion to its breadth, its greatest breadth, being a transverse line separating its anterior from its middle third, and not at the base as in *Nephrops*, is slightly more truncate posteriorly, and the oblique rounded elevations, that gradually narrow as they pass backwards into the spines at its postero-

\* On characters furnished by the claws alone Dana artificially divides the recognized genera of *Astacidae* into two groups, typified respectively by *Astacus* and *Nephrops*; the first of these is further subdivided according to the number of the branchiæ and the mobility or immobility of the last abdominal somite. But no mention is made of the fact that this is firmly fixed in *Nephrops* too. If *Paranephrops*, a genus including only freshwater forms, should turn out to have a mobile last abdominal somite, then we shall have this curious fact presented to us, viz., that all those members of the family *Astacidae* which live in freshwater or are terrestrial (*Engaeus*) have this somite moveably united by membrane only to that which precedes, while those of them that are marine have it fixedly united to the rest of the sternum.

† The ventral plates of the 2nd, 3rd and 4th postabdominal somites in the males of *Nephrops Norvegicus* have an erect spine in the middle line, but the females exhibit no trace of such.

lateral angles, are stronger than in *Nephrops*. The outer plate of the lateral elements of the swimmeret is moveably articulated at its posterior third as in the rest of the *Astacidae*, but the sutural line is curved and the posterior margin of the proximal and larger division exhibits hardly a trace of the overlapping denticulations seen in other *Astacidae*.

Length from tip of rostrum to the posterior margin of telson, .... 98 mm.

Length of carapace in middle line, ..... 42 mm.

„ „ postabdomen, ..... 56 mm.

therefore the postabdomen : carapace (rostrum incl.) ::  $1\frac{1}{2}$  : 1 exactly.

and the length of body : that of postabdomen ::  $1\frac{1}{2}$  : 1 „

The only specimen (a female) obtained was dredged in from 260 to 300 fathoms about 25 miles off Ross Island on the eastern coast of the Andamans. That the specimen was really brought up from this great depth is certain from the unmistakable signs of crushing from contact with the lip of the dredge, from its position in the dredge bag and from its firmly adherent greenish coating which appears to indicate that like *Calocaris MacAndrewæ* it was a burrower.

In conclusion I have to thank Captain Beresford, the commander of the vessel, for his skilful management of the sounding-line and for the zeal displayed by him in carrying out my wishes during our too short cruise.

I have much pleasure in connecting with this extremely interesting species the name of Major General Donald M. Stewart, C. B., Chief-Commissioner of the Andaman and Nicobar Islands, to whose ever ready help the success of my trip was so largely due.

#### Explanation of Plate IV.

Fig. 1. *Nephropsis Stewarti*, ♀, nat. size.

Fig. 2. Upper view of carapace of the same.

Fig. 3. Swimmeret of *N. Stewarti*.

Fig. 4. „ „ *Nephrops Norvegicus*.

Fig. 5. Inferior view of antennary region of *N. Stewarti*.

Fig. 6. „ „ „ „ „ *N. Norvegicus*.

Fig. 7. Sternal region of *N. Stewarti*.

Fig. 8. „ „ „ *N. Norvegicus*.

ON NEW OR LITTLE KNOWN SPECIES OF PHASMIDÆ. PART I,—*Genus Bacillus*,—by JAMES WOOD-MASON of *Queen's College, Oxford*.

(Read 7th August, 1872; received February 9th, 1873).

[With plates V, VI and VII.]

The difficulties that have hitherto defied all attempts at anything like a philosophical and natural classification of this interesting and truly remarkable family of Orthopterous Insects, although in a great measure due to the extraordinary extent to which protective modification has involved all parts of the body throughout the group, must be in part, at any rate, ascribed to our ignorance in so many cases of the opposite sexes of the species; and the discovery that *Acanthoderus lacertinus*, Westw. is the female of *Lonchodes luteoviridis* of the same author, renders it extremely probable that these latter difficulties will be found to be further complicated by other cases of the same nature. As instances of the value of a knowledge of the opposite sexes in the limitation of genera, I need only adduce the fact that the capture of *Acanthoderus bicoronatus*, West., and *Acanthoderus semiarmatus*, Westw., in copulâ with their respective males will necessitate the removal of those species, together with their allies, to the genus *Lonchodes*. Thus at the very outset of my researches, I am enabled, by the inestimable advantage of a residence in the great distributional area or metropolis of the family, to withdraw from a genus some of the most *bizarre* of its extremely heterogeneous contents. Since the publication in 1859 of Professor Westwood's classical Monograph of the family, a large number of new or imperfectly known species has been described or remarked upon by various authors,\* but chiefly by

\* Giebel, *Zeitschrift für d. gesamt. Naturwissensch.* xviii, p. 113.

Stål, *Öfversigt af Kon. Vetensk. Akad. Förhand.* xv, p. 308.

Coquerel, *Ann. Soc. Entom. Fr.* 1861, p. 495, pl. 9, fig. 1; *Bull. Soc. Ent. Fr.* 1866, pp. xxiii-xxiv.

Westwood, *Proc. Ent. Soc. Lond.* 1864, p. 16; *Ann. Soc. Ent. Fr.* 4<sup>e</sup> Sér. t. iv, pl. 6.

Walsh, *Proc. Ent. Soc. Phil.*, iii, p. 409.

Philippi, *Stettin Ent. Zeit.* 1865, p. 64.

Murray, *Ann. and Mag. N. H.* 3rd Ser. xviii, p. 265-268.

Kaup, *Proc. Zool. Soc. Lond.* 1866, pp. 577-578.

Souder, *Proc. Bost. Soc. Nat. Hist.* xii, pp. 99 and 340.

Lucas, *Ann. Soc. Ent. Fr.* 4<sup>me</sup> Série, t. ix, *Bulletin*, p. xxv.

Gerstæcker, *Archiv für Naturgesch.* xxxv, p. 211.

Bates,\* de Saussure† and Kaup‡ whom I mention by name on account of the extent and of the extreme value of their contributions. These numerous additions will be enumerated under the genera to which they belong.

#### GENUS 1.—*BACILLUS*, LATR.

Eleven new species have been referred to this genus since the appearance of Professor Westwood's monograph; of these one, viz., *B. patellifer*, Bates, is nearly certainly identical with *B. ? Artemis*, Westw., and two others, viz. *B. gramineus* and *aspericollis*, Bates, are most probably, as indeed the author of those species himself suspects, the opposite sexes of one species. The necessary deductions being made, eight remain, which, added together with those described below to the thirty-eight recognized by Westwood, bring up the total of known species of *Bacillus* to fifty-five.

##### *BACILLUS FUSCOLINEATUS*, n. sp. Pl. V. Fig. 7.

♂ Extremely slender, filiform, cylindrical. Antennæ of the length of the metathorax, 17-jointed; first joint depressed but not expanded, carinate above, with sub-parallel margins, the inner one of which is raised; second joint nearly twice as long as broad, sub-depressed; the rest filiform. Head scarcely narrowed from the eyes; a brown streak passes from the eye along

\* Descriptions of Fifty-two New Species of Phasmidæ, with Remarks on the Family, Trans. Linn. Soc. Lond. Vol. xxv, pt. I, pp. 321-359, pl. xlv, xlv.

† Rev. et Mag. de Zool. 1859.

Ann. de la Soc. Ent. de Fr. iv, Sér.

Rev. et Mag. Zool. 1861.

Phasmidarum nov. species nonnullæ. Rev. et Mag. de Zool. 1868. pp. 63-70.

Mélanges Orthoptérologiques, 2me Fasc. Mém. Soc. Phys. de Genève, xx, pt. 1, pp. 227-326, pl. 2, 3.

‡ Ueber die Eier der Phasmiden. Berlin Entomologische Zeitschrift, Vol. 15, 1870. Neue Phasmidæ.

*Bacillus (Ramulus) Humberti*, ♂ ♀, (= *Lonchodes* sp.) Saussure, Ann. Soc. Ent. Fr. 1861, p. 469. Hab. Ceylon.

*Bacillus (Baculum) ramosus*, ♀, Sauss. Revue de Zool. 1861, 128, et Mém. Orth. Fasc. II, p. 114. Hab. Brazil. (?)

*Bacillus carinulatus*, Sauss. ♂ ♀, Revue de Zool. 1868, 63 l. et Mém. Orth. 1869. Fasc. II, p. III, Pl. II, fig. 1. ♀ Hab. Ceylon.

*Bacillus gramineus*, Bates, ♂ Trans. Lin. Soc. Lond. 1865, pt. I, p. 326, pl. xlv, fig. 4. Hab. Natal.

*Bacillus aspericollis*, Bates, ♀, l. c., p. 327. Hab. Natal.

*Bacillus Guenzii*, Bates, ♂ l. c., p. 327, Pl. xlv, f. 14 a. Hab. Natal.

*Bacillus patellifer*, Bates, ♀ (? = *Bacillus ? Artemis*, Westwood), l. c., p. 328. Hab.

darjiling!!!

*Bacillus Scytale*, Bates, ♀, l. c., p. 328, pl. xlv, fig. 9. Hab. Ceylon.

*Bacillus leprosus*, Gerst., ♀, Arch. für Naturgesch. xxxv, p. 211. Hab. Zanzibar.

*Bacillus Gerhardii*, Kaup, ♂, Proc. Zool. Soc. Lond. 1866. Hab. New Zealand.

*Bacillus Geisovii*, ♂, Kaup, loc. cit.,

„ „

each side of the body as far as the commencement of the fourth abdominal segment where it becomes somewhat interrupted; the interval between this line and the margins of the dorsal area of the body is silvery white; below, the insect is of an uniform light yellowish green; above, between the brown lateral lines, darker green; the meso- and meta-notum are indistinctly carinate down the middle, and under a moderately powerful lens appear to be marked with delicate wavy transverse striæ; the striation becomes less distinct on the abdominal segments. The abdomen is slightly expanded at the junction of its 4th and 5th segments from which latter it sensibly decreases in width to the apex of the seventh, whence it widens to a trifling extent; seventh segment equal to about  $1\frac{1}{2}$  times the 8th, exactly twice as long as the 9th which is obtusely rounded at the extremity and above presents a median and two lateral less distinct ridges; these latter curve inwards at their apical ends, enclosing a shield-shaped area. Posterior margin of the terminal ventral segment slightly emarginate.

Legs simple, of excessive tenuity; anterior very slightly longer than the posterior pair; intermediate shorter by the length of their own tibia than the former. Cerci long, obtuse, porrected beyond the apex of the abdomen, slightly forcipated and grooved at the sides.

Total length 22 lines; head  $1\frac{1}{2}$ , prothorax 1, mesothorax  $4\frac{1}{2}$ , metathorax  $3\frac{1}{2}$ , abdomen  $9\frac{1}{2} + 2\frac{1}{2} = 11\frac{1}{2}$ ; antennæ  $3\frac{1}{2}$ .

Hab. Murree, Panjab. One specimen collected by Dr. W. Waagen.

*BACILLUS HISPIDULUS*, n. sp. Pl. VII. Figs. 2-3.

♂ Filiform, slender, sordid, with a dark-green median dorsal streak, extending from the apex of the mesothorax to the extremity of the abdomen. Head sub-ovate, with the sides slightly convergent posteriorly, antennæ 16-jointed, joints very distinct; first joint depressed but not expanded; second twice as long as broad, cylindrical, its proximal end the broader. Mesothorax hardly narrower in front than behind. Meso- and meta-notum with a raised median line and a few minute tubercles on their lateral margins. Abdomen cylindrical and filiform to the apex of the 6th segment, whence it suddenly expands to the junction of the 7th and 8th, whence it narrows to its truncate extremity which appears to be constricted between the 8th and 9th segments; six basal segments slightly expanded at their articular ends; 9th segment strongly carinate; the cerci curved and projecting at its postero-lateral angles.

Legs long, slender, and simple; first joint of anterior tarsi greatly elongated; rather more than twice as long as the remaining joints taken together.

Total length  $24\frac{1}{2}$  lines, antennæ 4, head  $1\frac{1}{2}$ , proth. 1, mesoth.  $5\frac{1}{2}$ , metath.  $4\frac{1}{2}$ , abd.  $10\frac{1}{2} + 2\frac{1}{2} = 12\frac{1}{2}$  lines.

♀ Much more robust, with a well-defined median raised dorsal line along the whole length of the body, antennæ absolutely shorter than those of the male, but with the basal joint strongly carinate and more expanded. The mesothorax is visibly attenuated in front from the commencement of its apical third, meso- and meta-notum with a few minute warts along their lateral margins; meso- and meta-sternum with a few similar warts scattered over their surface.

The abdomen is sub-fusiform, depressed to the apex of the 6th segment, and has a distinct ridge, which can also be detected on the thorax, running internally and parallel to the lateral margins of all its dorsal segments except the last; its five posterior segments have another ridge on each side midway between their sides and the median ridge. The posterior margin of the sixth ventral is produced in the middle into a sharp spine with a broad base. The seventh segment is nearly as long as the two last together; these are subequal. The last is subtruncate at its extremity beyond which projects a small triangular azygos-plate carinated above. Cerci, in form of a tall four-sided pyramid with its angles rounded, project at the postero-lateral angles of last segment.

Operculum spatulate in outline and flat below, with a broadly rounded extremity, not extending beyond the middle of the last segment.

First joint of tarsus in anterior legs as in the male. The body is covered with very short setæ in both sexes.

Total length,  $3\frac{1}{2}$  lines, ant.  $3\frac{1}{2}$ , head  $2\frac{1}{2}$ , proth.  $1\frac{1}{2}$ , mesoth.  $7\frac{1}{2}$ , metath.  $5\frac{1}{2}$ , abd.  $15\frac{1}{2} + 2\frac{1}{2} = 17\frac{1}{2}$  lines.

*Hab.*—South Andaman. Three males and three females, of which two were taken *in copulâ*.

I have received from Dr. Stoliczka, who obtained it from the Arakan coast, an insect differing from the male insect above described only in its greater length, in the absence of tubercles on the thorax, and in having two more joints to the antennæ; the measurements are as follows:

Total length 32 lines: ant. 6, head  $1\frac{1}{2}$ , proth.  $1\frac{1}{2}$ , mesoth.  $7\frac{1}{2}$ , metath. 6, abd.  $13 + 2\frac{1}{2} = 15\frac{1}{2}$  lines.

*BACILLUS OXYTENES*, n. sp. Pl. V. Fig. 3.

♀ Excessively long and slender. Head unarmed, narrow, almost cylindrical, being but slightly broader in front than posteriorly, notched behind in middle. Antennæ 28-jointed, as long as the terminal segment of the abdomen; first joint depressed, carinated above and expanded, second longer than broad, also depressed. Mesothorax much longer than the metathorax, sparsely granulated above and below, slightly expanded at the insertion of the legs, otherwise of perfectly uniform width; meta-thorax with only a few scattered granules above and below; meso- and meta-notum with a dark raised mesial line. Abdomen long, perfectly smooth, very gradually and

regularly attenuated from its base to its almost indescribably acute, deeply-cleft, slightly recurved, and strongly compressed extremity. The seventh segment is hardly twice as long as the 8th, which is about a fifth of the length of the last; this has a perceptible upward curvature and is cleft nearly to the insertion of the minute conical *cerci*. The operculum is subdepressed, acutely pointed at the extremity, carinated below and reaches the commencement of the middle third of the last segment, where the *cerci* are inserted.

Legs long, but rather stout as compared with the body, triquetrous; the fore femora are serrated for more than two-thirds of the length of the straight portion, intermediate femora with two or three triangular spines close together above near the base; posterior ones with one or two. Tibiæ with a well defined but not very salient foliaceous carina below; four posterior ones with minute spinules on all their crests. The right middle leg is a reproduced limb, having but four joints to the tarsus and a single spine on the femur.

Total length of the body 4 in. 9 lines; antennæ  $6\frac{1}{2}$ ; head  $2\frac{1}{2}$ ; proth. 2; mesoth.  $11\frac{1}{2}$ ; metath.  $8\frac{1}{2}$ ; abdomen  $23\frac{1}{2} + 10 = 33\frac{1}{2}$  lines.

Abdomen: rest of body :: 1.4255 &c.: 1.

*Hab.*—Pegu Yomah, collected by Mr. S. Kurz, the botanist at the Calcutta Botanic Garden, during his recent botanical tour through Burma and the Tenasserim Provinces.

In the form of the terminal segments of the body, this species approaches *B. Regulus*, Westw. ♀ (Cat. p. 8, Pl. XXII).

#### BACILLUS LÆVIGATUS, Pl. V. Fig. 4.

♀ Very slender and cylindrical and smooth. The head is armed with two minute blunt erect spines between the eyes, and is slightly narrowed behind; its posterior margin with 3 or 4 notches. Antennæ exactly half the length of the mesothorax; first joint depressed and somewhat expanded, feebly carinate above, its outer margin more convex than the inner; second joint fully as broad as long, depressed.

Abdomen extremely long and slender, tapering very gradually to the apex of the seventh segment; whence it very slightly expands to the basal half of the last which suddenly narrows to its extremity; this is divided by a short cleft into rounded tips. 7th dorsal segment equal to 8th, half as long as the last which is carinate above. *Cerci* pointed. Operculum narrow depressed, obtusely pointed, reaching the end of basal third of last segment.

Legs simple; anterior pair tolerably long; anterior femora serrated for three-fourth of the length of upper crest. The first joint of anterior tarsi is twice the length of its homologue in the intermediate legs, which is rather shorter than that of the posterior legs.

Total length of body 2 in. 10 lin, ant.  $3\frac{1}{2}$ , head  $1\frac{1}{2}$ , proth.  $1\frac{1}{2}$ , mesoth.  $6\frac{1}{2}$ , metath. 5, abd.  $15\frac{1}{2} + 3\frac{1}{2} = 19\frac{1}{2}$  lines.

*Hab.*—Samagooting, Naga Hills, Assam. One immature specimen collected by Capt in Butler. This species is closely allied to *B. Westwoodii*.

*BACILLUS WESTWOODII*, n. sp. Pl. VI. Fig. 3.

♀ Elongate, slender, sub-cylindrical, convex. Head narrowed from the eyes to the base, with its sides slightly convex, armed between the eyes with two forwardly and slightly outwardly directed spines; and with its posterior margin faintly notched in the middle and on each side. Antennæ more than half as long as the mesothorax, from 21 to 26-jointed; first joint carinated above and depressed but not expanded; second joint nearly as broad as long; the rest filiform with the exception of the last which is thickened at the tip. Mesothorax slightly narrowed in front and, with the metathorax, somewhat expanded at the insertion of the legs. The abdomen is narrowed from the base to the apex of the first segment, expands again to the apex of the second, maintains pretty much an uniform width for the next two or three segments and finally gradually tapers to a point. The seventh dorsal segment is twice the length of the eighth, but hardly exceeds the last. This is cleft and slightly compressed at the extremity. The operculum is somewhat boat-shaped, below strongly carinate for its posterior half, and comes into such close and complete opposition with the margins of the terminal dorsal segments, with which it is coincident, as to conceal from view the genital parts, permitting only the tips of the *cerci* to emerge. Legs triquetrous, their edges beset with short cilia; straight portion of upper edge of fore femora serrated nearly to the apical end; the intermediate and hind femora have a triangular spine below at the apex; all the tibiæ have a foliaceous carina arising near the base and gradually subsiding towards the apex; the posterior ones have sometimes a triangular foliaceous spine near the base above; the intermediate ones sometimes one, two or none. Tarsi triquetrous; first joint of the anterior pair as long as the others taken together; in the other legs it is not nearly as long as the united lengths of the remaining joints.

Total length of the body 4 in. 8 lines, antennæ  $6\frac{1}{2}$ , head  $2\frac{1}{2}$ , proth. 2, mesoth. 11, metath. 8, abdomen  $27\frac{1}{2} + 5\frac{1}{2} = 33$ .

Abdomen : rest of body :: 1:40:12 : 1.

In the specimen described, the intermediate legs when stretched straight backwards, reach to the commencement of the posterior third of the fourth abdominal segment, the posterior legs to the *cerci anales*; in other specimens the intermediate legs extend rather beyond the fourth segment, and the posterior ones beyond the extremity of the abdomen.

*Hab.*—Nine adult and three immature females were captured by my



private collector during the months of August, September and October last in the neighbourhood of Port Blair on South Andaman. An immature insect collected by Mr. Homfray at Camorta, Nicobar Islands, differs so slightly from larvæ, beyond doubt belonging to the present species, that I hesitate to give it another name.

**BACILLUS (BACULUM) ARTEMIS, Westwood. Pl. VI. Figs. 1-2.**

*Bacillus ? Artemis*, ♀, Westwood, Cat. of Orthopterous Insects in the British Mus., 1859, Pt. I, Phasmidæ, p. 10, pl. xxvi, fig. 9, 9a.

*B. patellifer*, Bates, ♀, Trans. Lin. Soc. London, 1865, Vol. xxv, Pt. I, p. 328.

Numerous specimens of an insect remarkably abundant in the moist, deep valleys of Sikkim, in Cachar, in the Bhutan Doars and at Samagooting in the Naga Hills, agree in every respect both with Bates' description of *B. patellifer* and with *Bacillus ? Artemis* described and figured by Prof. Westwood from a dried and mutilated example now in the Hopeian collection at Oxford. The comparison of dried specimens in my possession with Westwood's figures shows that the compression of the three terminal segments is mainly, and that the depression and enlargement posteriorly of the sixth dorsal are entirely effects of drying. Bates omits to mention that the terminal dorsal segment is grooved above in the middle line, and that the emargination in its posterior border is occupied by a small carinated azygos plate with a rounded hinder margin; the state of preservation of Prof. Westwood's specimen may probably account for his omission to mention not only these points but even the emargination itself. The following are the dimensions of a specimen from the Naga Hills figured on plate vi.

Total length 4 in. 5 lines, ant. 7 lines (25-jointed), head  $2\frac{1}{2}$ , proth. 2, mesoth.  $10\frac{1}{2}$ , metath. 8, abd. 2 in.  $0\frac{1}{2}$  line + 6 = 2 in.  $6\frac{1}{2}$ .

A variety found in all the districts mentioned above with the exception of the Bhutan Doars is figured side by side with the typical form on the same plate as showing the value of the armature of the legs unsupported by other characters in making a species; almost every gradation from the extremely acanthophyllous and spinose condition of the legs there depicted to their almost completely unarmed condition in fig. 1 being to be met with. Fig. 2 a, 2 b, 2 c may represent the same parts of fig. 1.

**BACILLUS (BACULUM) INSIGNIS, n. sp. Pl. V. Figs. 1-2.**

♀ Extremely robust, greatly elongated, subcylindrical, convex. Head remarkably stout, conspicuously narrowed from the eyes to the base, the sides being almost straight, armed between the eyes with two stout-based, acuminate, forwardly-directed and incurved spines or horns, notched posteriorly in the middle. Antennæ 25-jointed; basal joint depressed, expanded, and carinated above. Mesothorax gradually attenuated from the

base forwards; metathorax of uniform width; both are marked above with a fine raised median line which is continued on to three or four of the basal segments of the abdomen.

The abdomen is attenuated from the base of its third segment to the extremity. The three terminal segments are compressed; the first of these is twice as long as the second; the second  $1\frac{1}{2}$  times as long as the last which is grooved above in the middle line and has its posterior margin divided into two rounded lobes by a narrow fissure filled by the median carina of a small azygos plate; the upper contour of this last segment meets that of the preceding at a very obtuse angle. The operculum extends about one line beyond the abdomen; its posterior half is greatly compressed, so much so at its sub-truncate extremity that its opposite inner faces are in complete contact. *Cerci* minute, conical, their tips alone projecting slightly between the posterior and middle thirds of the last abdominal segment.

Legs stout, triquetrous; upper and lower crests of fore femora inconspicuously serrate towards the base; the intermediate femora are curved, their upper margin forming the convex curvature, and below at the base present two conspicuous divergent foliaceous expansions with rounded free margins, one springing from each crest and a conical spine at the apex; the posterior femora are but feebly curved and exhibit but a faint indication of these foliaceous lobes, and have also a spine at the apex below; all four posterior femora appear to be regularly tricarinate above, owing to the very close approximation of their two upper crests. The intermediate tibiæ have a large foliaceous lobe like a tooth of a saw near the base above, which is much reduced or even absent in the posterior pair; all the tibiæ have a sharp, well-developed foliaceous carina, on their basal third below, which in the fore tibiæ traverses the whole length of the joint. The first tarsal joint in the fore-legs is hardly as long as the other joints taken together; in the other legs it is not nearly as long.

The intermediate legs if stretched backwards would reach only just beyond the apex of the third, the posterior ones to the apex of the sixth abdominal segment.

Total length of body 7 in.  $2\frac{3}{4}$  lines; antennæ  $8\frac{1}{2}$ ; head  $3\frac{1}{2}$ ; proth.  $2\frac{1}{2}$ ; mesoth.  $16\frac{1}{2}$ ; metath. 14; abd.  $40 + 9\frac{1}{2} + \text{operc. } 1 = 50\frac{1}{2}$ .

Abdomen: rest of body :: 1.3655 &c.: 1.

*Hab.*—Samagooting, Naga hills, Assam, (Captain Butler); Sikkim (Mr. Mandelli); and the valleys around Cherra Punji in the Khasi hills (Lieut. Bourne).

#### BACILLUS (BACULUM) PENTHESILEA, n. sp. Pl. V. Fig. 5.

♀ Elongate, stout, cylindrical, smooth, with a faint raised median line extending from the anterior extremity of the mesothorax nearly to tip of

the abdomen. Head not so stout as in the preceding species, armed between the eyes with two minute conical spinules or tubercles, its posterior margin presents 3 notches giving it the appearance of being bi-tuberculate, narrowed from the eyes to the base. Antennæ very slender, as long as the three terminal abdominal segments taken together, 30-jointed; first joint somewhat expanded; second minute, hardly longer than broad, followed by 28 filiform joints gradually increasing in length to the apical one. Mesothorax uniform in width except at the insertion of the legs where it is expanded. Metathorax broader than the mesothorax and expanded at each end.

Abdomen very long, attenuated from the base of the 5th segment; the three segments anterior to this are uniform in width and broadest of all, broader even than the basal segment which is just perceptibly concave at the sides; the 6th ventral has a rounded punctate callosity posteriorly; the ante-penultimate segment is as long as the two last taken together; the last is grooved above in the middle line, has its posterior angles pointed and rather deflexed than projecting outwards and its hinder margin sub-angularly emarginate, the emargination being filled by an azygos plate which is carinate, has its free margin straight and projecting beyond the acutely angular tips of the segment, and its postero-lateral angles rounded. *Cerci* tolerably salient, obtuse. Operculum subcompressed and carinate for nearly its posterior half, rounded but not compressed at the tip which barely reaches as far as the bottom of the emargination in the last segment.

Legs slender; anterior pair triquetrous; the two other pairs subtriquetrous, their upper crests being not nearly so closely approximated as in the preceding species. The intermediate legs, stretched straight backwards so as to be parallel with the long axis of the body, reach to the middle of the 4th, the posterior ones to that of the 7th segment. The anterior femora are denticulate to beyond the middle of their upper and lower crests; the four posterior pairs are devoid of spines or foliaceous lobes except at their apical ends below where there is a short denticulate elevation, all the tibiae have a lamellar carina arising and attaining its greatest development near the proximal end; and the distal halves of the four posterior ones are acutely spinulose on all edges. The first joint of the tarsus of the fore-legs is fully as long as, of the intermediate legs shorter than, of the posterior legs almost as long as, the remaining joints together; but the first tarsal joint of 1st legs is longer and slenderer than those of the 2nd and 3rd pairs.

Colour green with the prosternum, bases of all the legs, the stigmata, the spines on the head and the interval between them, and the apex of the abdomen blackish-brown.

Total length, 6 in.  $10\frac{1}{2}$  lines; antennæ, 9 lin.; head,  $3\frac{1}{2}$ ; proth.  $2\frac{1}{2}$ ; mesoth.  $15\frac{1}{2}$ ; metath.  $13\frac{1}{2}$ ; abdomen 3 in. 3 lin. + 9 lin. = 4 in.; ant. legs: femur 23 lin. + tibia 22 + tarsus  $6\frac{1}{2}$  = 4 in.  $3\frac{1}{2}$  lin.; inter. legs: f.  $17\frac{1}{2}$  + tib.

16 + t.  $4\frac{1}{2}$  = 3 in.  $2\frac{1}{2}$  lin. ; post. legs : f. 20 + tib. 18 + tar. 5 = 3 in. 7 lines.

Abdomen : rest of the body : : 1·3012 &c. : 1.

*Hab.*—A single specimen was collected in the neighbourhood of Baxa, Bhután Doár, by Dr. Cameron.

**BACILLUS (BACULUM) FURCILLATUS, n. sp. Pl. V. Fig. 6.**

♀ Elongate, cylindrical, smooth. Head unarmed, narrowed from the eyes to the base, with three notches on its posterior margin. Antennæ long and fine, as long as the metanotum proper, or as the two basal segments of the abdomen together, 24-jointed ; first joint depressed, not greatly expanded, strongly carinate above ; second longer than broad, sub-cylindrical ; rest filiform. Meso- and meta-notum with a most delicate median line in relief ; the former is of uniform width throughout, the latter very slightly expanded posteriorly at the origin of the legs. Abdomen shorter in proportion to the rest of the body than in the two preceding species, cylindrical to the apex of its fifth segment ; whence it becomes slightly compressed and attenuated to its furcate extremity. A small azygos plate carinated above and with its posterior margin rounded, fills the bottom of the interval between the arms of the fork, which conceal its sides from view from above. The operculum is boat-shaped ; its extremity which is rounded and slightly spread out horizontally, attains the level of the bottom of the fork only.

The legs closely resemble those of *B. Penthesilea*, but the four posterior femora have some widely-placed spinules on both their inferior crests ; the intermediate ones reach to the end of the basal third of the 5th, the posterior extend slight beyond the terminal abdominal segment.

Total length 5 in.  $1\frac{1}{2}$  lin. : antennæ 8 ; head 3 ; proth.  $2\frac{1}{2}$  ; mesoth.  $12\frac{1}{2}$  ; metath. 10 ; abd.  $27\frac{1}{2}$  +  $6\frac{1}{2}$  =  $33\frac{1}{2}$  ; ant. legs, 3 in. 7 lin. ; inter. legs 2 in. 6 lin. ; post. legs 2 in. 11 lin. Colour uniform green.

The abdomen : rest of body : : 1·2162 &c. : 1.

*Hab.*—Baxa, Bhután Doár, collected by Dr. Cameron.

This species is at once distinguished from the two preceding, as indeed these are from one another, by the difference in the structure of the terminal dorsal segment ; by the form of the operculum, by the relative length of the abdomen to that of the body, and by the absence of spines from the head.

In the four preceding species to which M. de Saussure's subgeneric term *Baculum* may be provisionally applied, the last dorsal segment of the abdomen is mesially grooved above ; the line of structural weakness thus produced, may possibly subserve the purpose of giving greater expansibility to the segment during copulation and oviposition. This peculiarity of structure is present also in *Bacillus (Baculum) Ouniculus*, Westwood, in *B. (B.) Hyphæreon*, Westwood, and in *B. (B.)*

*scytale*, Bates, if one may judge from the published figures of those species. With regard to the last mentioned, it should be noted that Mr. Bates, although he states its affinities to be with the first, at the same time refers it to a totally distinct subgeneric group, *viz.*, to *Ramulus*, de Sauss., in which the abdomen is fusiform and acuminate at the extremity. It is also to be remarked that the species to which *B. scytale* is said to be so nearly related by Bates has turned out not to be a *Bacillus* at all, but a *Lonchodes* very closely allied indeed to *L. pseudoporus*, Westw., if not identical with that species. *Ramulus* is, however, still retained by M. de Saussure for a group of the *Bacilli*, under which *B. humilis*, Westw., *B. carinulatus*, Sauss., &c., have been arranged.

BACILLUS SCABRIUSCULUS, n. sp. Pl. VII. Fig. 1.

Very robust. The integument is wrinkled and studded with granulations and small tubercles. Head thick, coarsely granulated, very little narrowed behind, armed between the eyes with two conical spines, projecting outwards and slightly backwards and with their bases united by a transverse elevation, bi-tuberculate posteriorly. Antennæ as long as the metathorax, 18-jointed, ciliated; the first is depressed and expanded, and strongly carinated; the second joint is about half the length of the first, twice as long as broad and depressed; the rest are slenderer than it and filiform. Prothorax narrower in front, with its anterior margin hollowed for the reception of the head, covered with coarse granules. Meso- and meta-notum irregularly wrinkled longitudinally and covered with small tubercles or coarse granules, marked with a raised median line; the former gradually widens from the apex to the insertion of the intermediate legs; the latter is broader and of uniform width, and a distinct suture divides it into an anterior posterior division (the true 1st abdominal segment = *segment mediare*). Below, the granulations and wrinkles are finer. The abdomen is cylindrical to the fifth or sixth segment, whence it becomes suddenly contracted and compressed, but expands again slightly at the apex which is furcate; the bottom of the fork is occupied by a small carinated azygos plate. The upper contour of the three terminal dorsal segments is extremely convex and the posterior margin of the first two of them is produced into a small process. The opereculum is lanceolate in outline as seen from below, its posterior half is carinate and its apex barely reaches the level of the minute *cerci*.

Legs long; anterior pair triquetrous, the rest prismatic; anterior femora serrated to the middle of the upper crest; the intermediate ones are armed with three conspicuous dentate foliaceous lobes above and with three small spines on the other crest, one opposite to each of the foliaceous lobes; the posterior femora have some small spines on each of their upper crests. The

intermediate tibiæ have each two small foliaceous lobes above at the proximal end and immediately opposite to these, below, a single spine; at their distal ends all their edges are spinulose; the posterior tibiæ have two minute spines above at the proximal end and their distal ends are similarly spinulose. All the legs are shortly-ciliate, especially at the extremities.

Total length 4 in.  $1\frac{1}{2}$  lines; antennæ  $7\frac{1}{2}$ ; head  $3\frac{1}{2}$ ; proth.  $2\frac{1}{2}$ , mesoth.  $10\frac{1}{2}$ ; metath.  $7\frac{1}{2}$ ; abdomen  $18\frac{1}{2} + 7 = 25\frac{1}{2}$  lines.

*Hab.*—Naga Hills, Assam. A single specimen was collected by Captain Butler.

### *Explanation of Plates.*

#### Plate V.

Fig. 1. *Bacillus (Buculum) insignis*, ♀, nat. size, 1a, the head seen sideways; 1b, the extremity of the abdomen seen sideways.

Fig. 2. Upper view of terminal abdominal segment of *B. insignis*, ♀, enlarged.

Fig. 3. *B. oxytenes*, ♂, nat. size; 2a, extremity of the abdomen from the side.

Fig. 4. *Bacillus lævigatus*, ♀, nat. size; 4a, b, c, represent same parts as in the previous figures.

Fig. 5. Upper view of terminal abdomen segment of *B. Penthesilea* ♀, enlarged; 5a, side-view of three terminal segments, nat. size.

Fig. 6. *B. furcillatus*, ♀, terminal segment of the abdomen from above, enlarged; 6a, the three terminal segments nat. size seen sideways.

Fig. 7. *B. fuscolineatus*, ♂, nat. size; 7a, the three terminal segments of the body seen from above; 7b, the same seen from the side.

#### Plate VI.

Fig. 1. *Bacillus Artemis*, Westw. ♀, nat. size.

Fig. 2. *Bacillus Artemis*, Westwood ♀, var. nat. size; 2a, the three terminal segments seen from the side; 2b, the terminal segment, X 2 from above, 2c, the extremity of the abdomen from below, 2d, basal joint of antennæ magnified.

Fig. 3. *B. Westwoodii*, ♀, nat. size; 3a, side view of three terminal segments of abdomen; 3b, the same from below.

#### Plate VII.

Fig. 1. *Bacillus scabriusculus*, ♀; nat. size; 1a, the three terminal segments of the abdomen from the side.

Fig. 2. *Bacillus hispidulus*, ♂, nat. size; 2a, the terminal segments of the abdomen seen sideways; 2b, the same seen from above; 2c, the same from beneath.

Fig. 3. *Bacillus hispidulus*, ♀, nat. size; 3a, 3b, 3c, represent same parts as in fig. 2.

ON AN UNDESCRIBED SPECIES OF *LOPHOPHANES*, by W. E. BROOKS, C. E.,  
*Assensive.*

[Received 11th February, 1873; read 5th March, 1873.]

*LOPHOPHANES HUMET*, n. sp.

*Description.* Head and crest, neck, chin and throat, bluish black; the black of the throat extends about 0·6 of an inch from base of lower mandible; cheeks and ear coverts, and sides of the neck beyond ear coverts, form a patch of pure white; there is also a large patch of pure white on the back of the neck; on the sides of the neck below the white patch the black extends about  $\frac{1}{4}$  of an inch lower down than it does on the centre of the breast; back and wing coverts dark bluish grey, becoming paler and more ash coloured on the upper tail coverts; lesser and greater wing coverts tipped with bright white; wings and tail dusky, the feathers having paler edges; wing lining, axillaries and breast a clear ochre passing to a dusky yellow grey on the flanks, lower abdomen, and under tail coverts. This fulvous lower surface is characteristic of the species. Bill black; legs and feet dusky.

Total length judging from the skins, will be about 4 inches.

No.	Length of skin.	Wing.	Tail.	Bill at front.	Tarsus.	Midtoe and claw.	Hindtoe and claw.
1—	3·7	2·25	1·76	·32	·68	·5	·48
2—	3·5	2·12	1·73	·3	·66	·5	·5

This species strikingly resembles in colouration the plate of *Parus Britannicus*, Sharpe and Dresser, in their fine work on the Birds of Europe; except that it is almost devoid of the greenish tint of the upper parts shewn in the plate, and our species is not a typical *Parus*, but a crested *Lophophanes*. It is also rather like Hodgson's drawing of *Parus oemodius*; but that species is not shewn to be crested, neither has it any white spots on the wings.

I picked this species out of a collection of Sikkim birds, sent by Mr. Mandelli to Mr. Ball. The discoverer allows me to describe it, and I have, therefore, great pleasure in naming it after my friend Mr. Hume, as I cannot remember any species named after the most laborious of our present Indian Ornithologists.





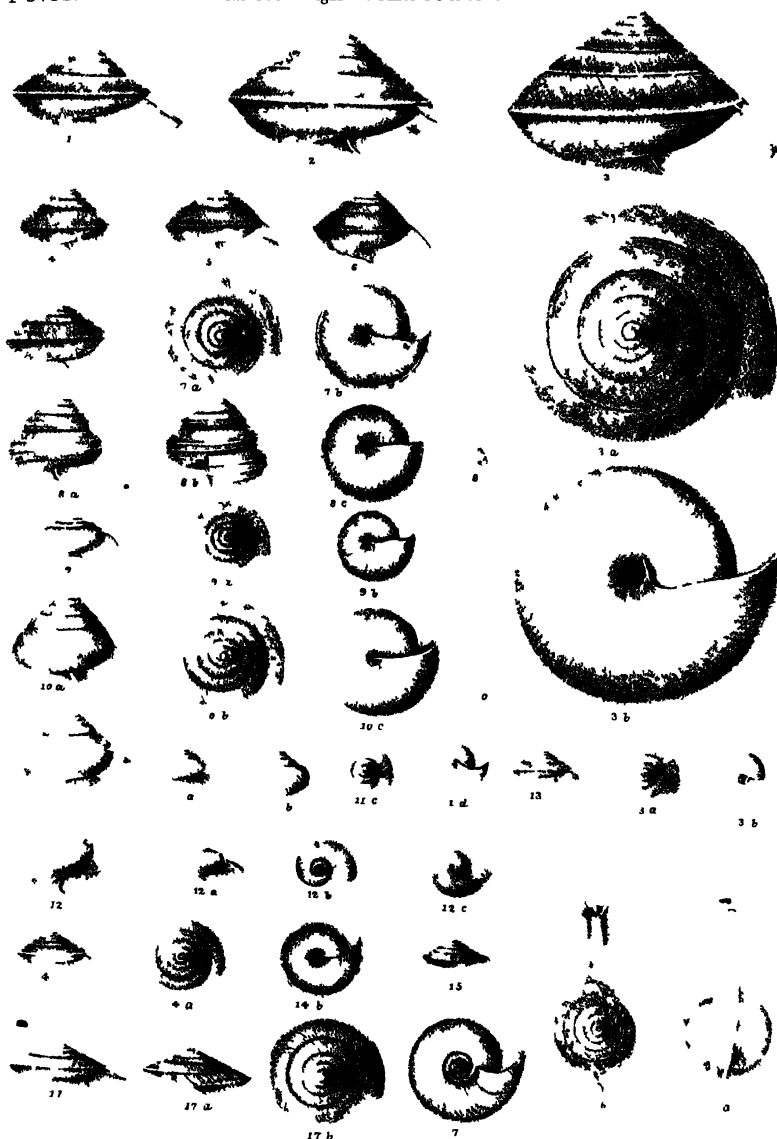


Fig 3 *Rhynchotrema ymatum*

4 7 *Rotalia hyalina*

8 *Succinea carinata*

9 *Macrochlamys stephoides*

10 *Microcystus palmicola*

Fig 18 *Eulicaria perfoliata*

2 *Vesicula testacea*

3 *Trochomastomina*

4 16 *Castro*

17 *Tumorenata*

For further explanation see p 37







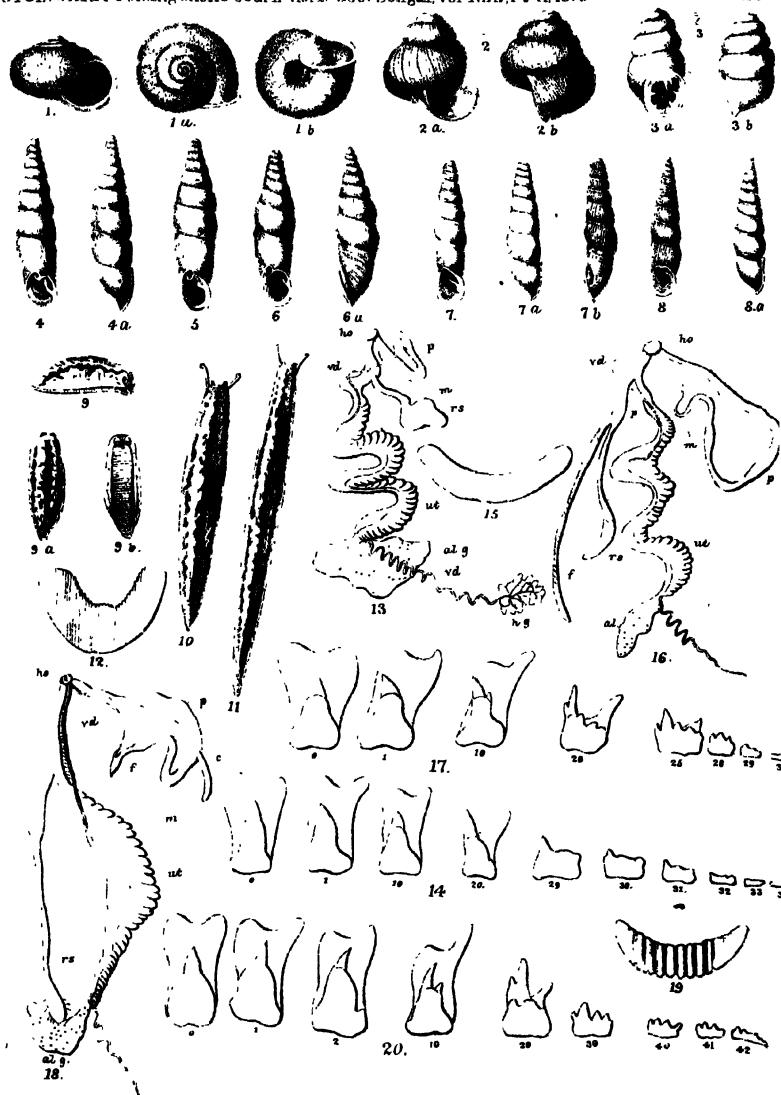


Fig 1 18-20 *Trachia Penangensis*, p 24

" 2. *Papu. orcella*, p 33

" 3 " *palmaria*, p 32

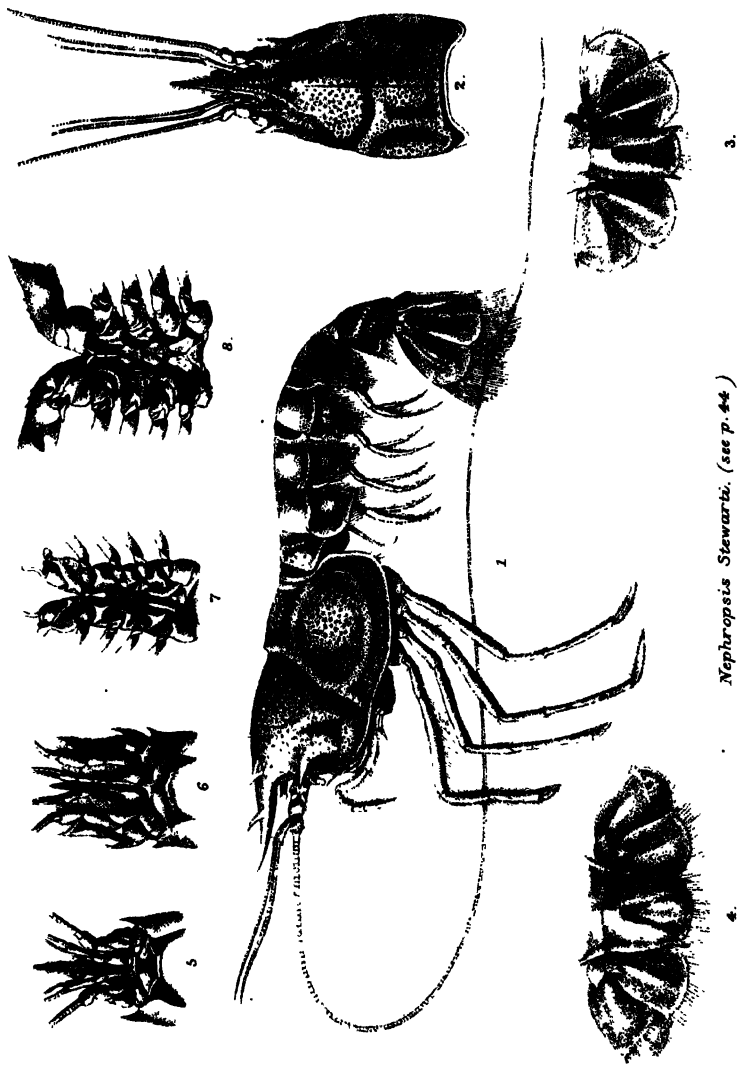
4-6, 13-17 *Classica Penangensis*, p 27.

7-8 *Classica filicostata*, p 28

9-14 *Philomycus pictus* p 30

For further explanation see p. 38





*Nephropsis Stewarti.* (see p. 44)





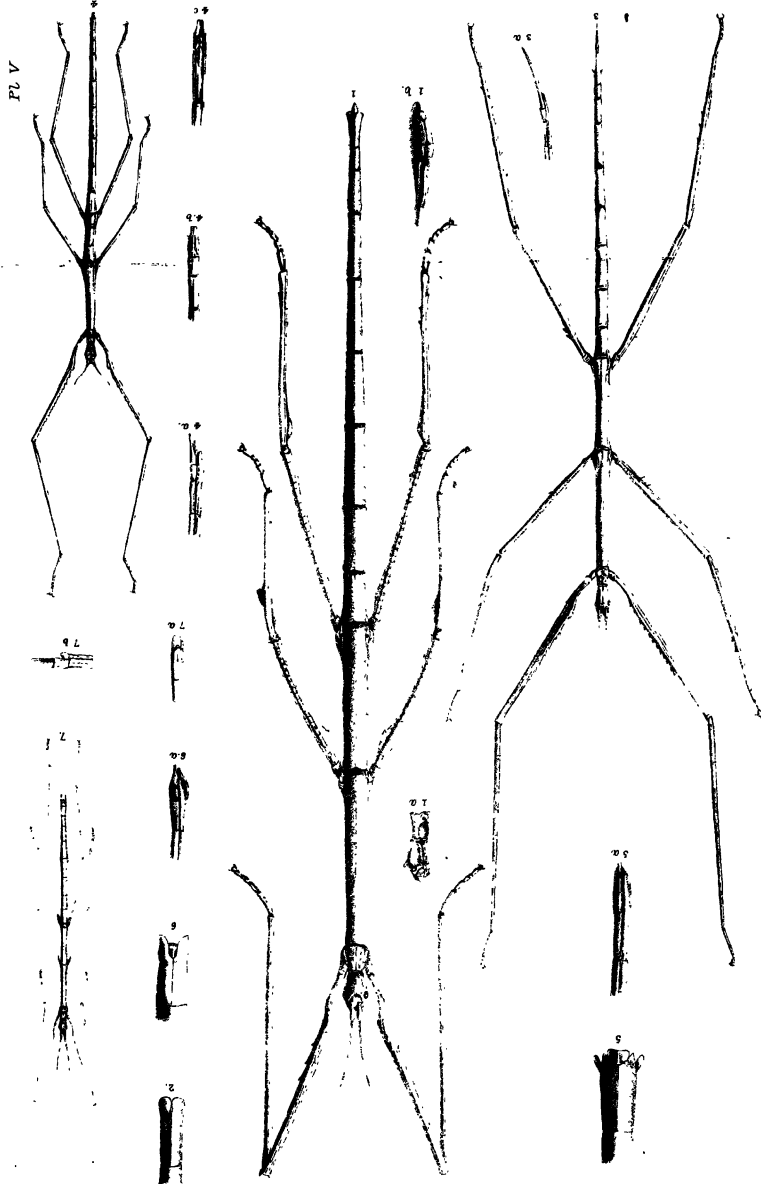


Fig. 1-2. *B. insignis*, p. 51. Fig. 3. *B. oxytenes*, p. 48. Fig. 4. *B. laevigata*, p. 49. Fig. 5. *B. pendula*, p. 52. Fig. 6. *B. furcata*, p. 54. Fig. 7. *B. fusiformis*, p. 46. Fig. 8. *B. exilis*, p. 56. For further explanation see p. 56.



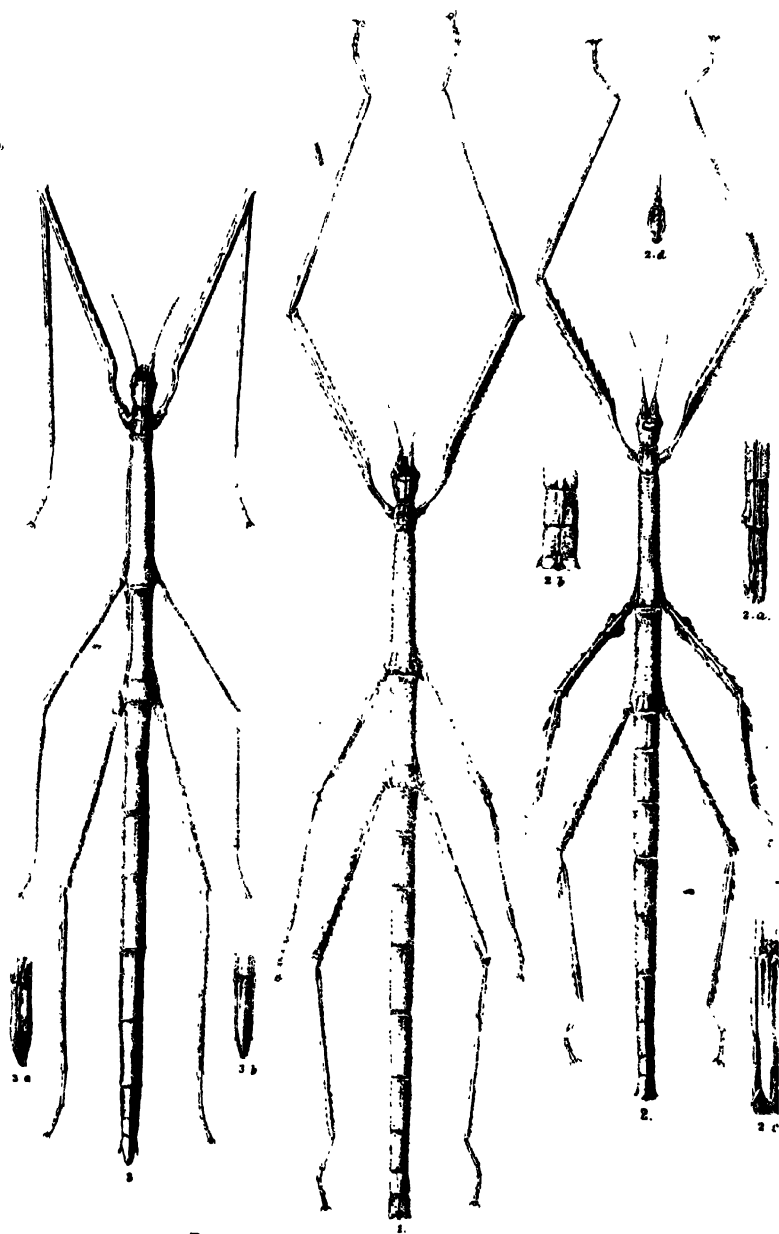


Fig 1-2 *B. Artemas*, p 51 Fig 3 *B. Westwoodii*, p 50.  
For further explanation see p 5c



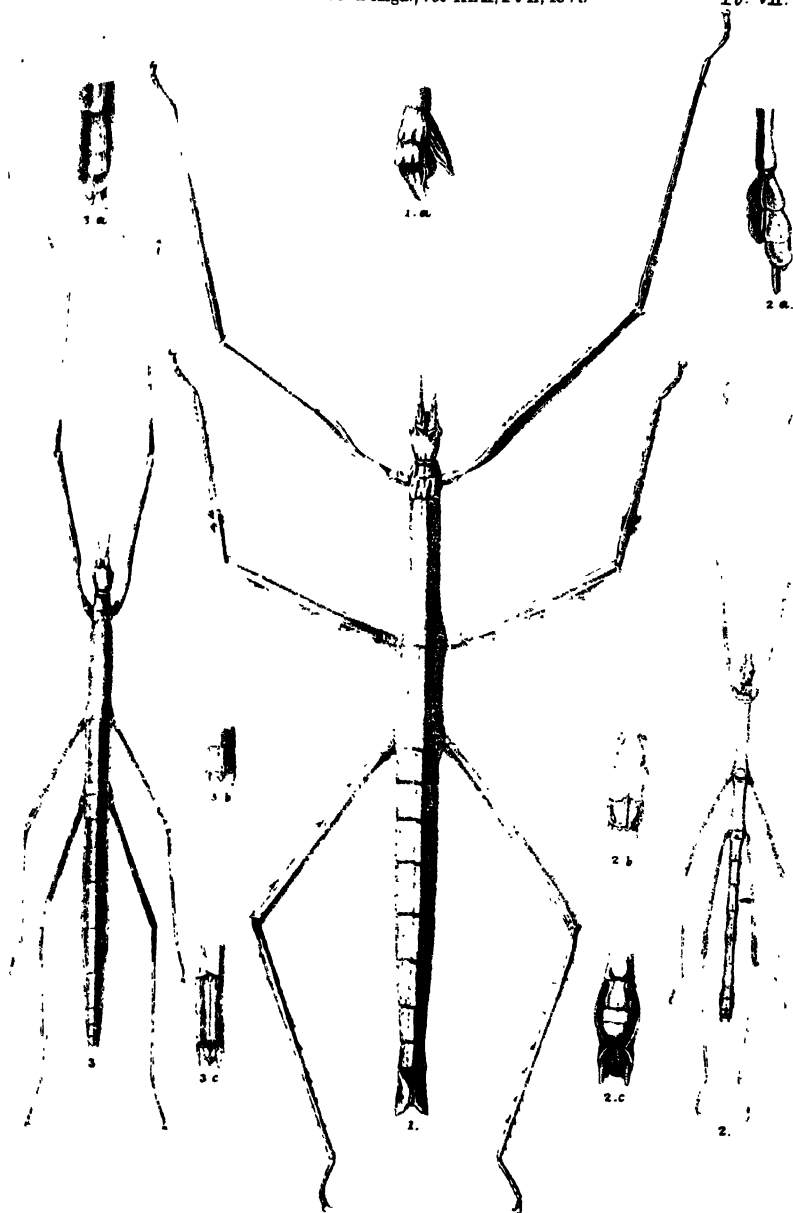


Fig 1 *B. scabrisculus*, p 55 Fig: 2-3. *B. hispidulus*, p. 47  
For further explanation see p 56.



# JOURNAL OF THE ASIATIC SOCIETY.

## Part II.—PHYSICAL SCIENCE.

No. II.—1873.

NEW BURMESE PLANTS. PART II,—by S. KURZ, Esq.

[Received 15th Feb., read 5th March, 1873.]

[With plates VIII, IX, X.]

### *TERNSTROEMIACEÆ.*

106. *ANNESLEA MONTICOLA*, nov. sp.

Arbor 80-90 pedalis v. in regionibus altioribus pumila, glaberrima; folia c. 3 (arboris juvenilis usque ad 7) poll. longa, ovato-oblonga, raro lanceolata, basi rotundata v. obtusa et subdecurrentia, breve lateque petiolata, acuminata v. acuta, integra v. obsolete crenata, crassissime coriacea, nervis vix visibilibus, subtus (in sicco) atropunctata; flores majusculi, basi bibracteolati, pedicellis 2, sub fructu usque 3 poll. longis crassis albis ramulos terminantibus; calyx coriaceus, albus; corolla rosea. *Martaban*.—*A. crassipedi* arcte affinis, pedunculis et foliis acutis distinguitur.

107. *SAURAUJA ARMATA*, nov. sp.

Arbor 25-30 pedalis, novellis squamis adpressis firmis subosseis acutissimis vestita; folia 9-10 pollicaria, lato-ovata ad obovato-oblonga, acuta, basi obtusa, brevissime petiolata (petiolis crassis squamatis), spinescenti serrata, chartacea, glabra, sed subtus secus costam nervosque squamis subosseis adpressis adpersa; flores  $1\frac{1}{2}$  poll. fere in diametro, in pedunculis brevissimis crassis dense squamatis solitarii, vulgo supra foliorum delapsorum cicatricibus fasciculati; sejala tomento squamis rigidis adpressis intermixto obducta; ovarium unacum parte unita stylo 5 dense villosum.—*Martaban*.

alaeformem producta.—*Martaban*. N. B. H. *attenuata*, Wall., Cat. 1140 ; Horsf. et Benn. H. Jav. rar. 237, a me non visa, vix hujus generis sed probabiliter cum *Brownlowia lanceolata*, Bth., comparanda.

116. *HELICTERES OBTUSA*, Wall. Cat. 1184.

Fruticulus partibus omnibus fulvo-tomentellis ; folia oblonga ad oblongo-lanceolata, brevissime petiolata, basi obtusa v. rotundata ibidemque 3-nervia, 2-2½ poll. longa, in eademque stirpe obtusa v. acuta et vulgo mucronata, chartacea, integra, supra pilis brevibus stellatis adspersa, subtus fulvescenti stellato-tomentella ; flores parvi, breve pedicellati ; cymæ fulvo-tomentellæ, brevissimæ, axillares, paucifloræ, graciles ; calyx circ. 2 lin. longus, stellato-tomentellus et subfurfuraceus ; petala sublongiora ; staminum columna glabra ; capsulæ oblongæ, breves, circ. 7-8 lin. longæ, dense villosomuricatæ, carpellis inter se arcte coherentibus obtusis v. subobtusis.—*Martaban*, *Tenasserim*. *H. lanceolata*, DC. (= *H. virgata*, Wall.) affinis.

117. *PTEROSPERMUM ACEROIDES*, Wall. Cat. 1171.

Arbor, novellis dense tomentosis ; folia elliptica v. lato-oblonga, utplurimum subobliqua, arboris junioris palmato-5-7-loba, breviuscule petiolata, profunde et saepius inaequali-cordata, verosimiliter nunquam peltata, breve acuminata v. apiculata, supra glabra, subtus canescenti v. fulvescenti-tomentosa, basi 5-7-nervia ; stipulæ... ; flores magni, albi, breve crasseque pedicellati, 3-v. 2-ni axillares et subcymosi ; bracteolæ oblongo-lanceolatae, tomentosæ, integræ ; calyx 2-3 poll. longus, sepala crassissime coriacea, linearia, ferrugineo-tomentosa, extus striata, intus fulvo-stellato pubescentia ; stylus glaber ; ovarium fulvescenti-tomentosum ; capsulæ 5-angulares, oblongæ.—*Tenasserim*, *Andamans*.

### *TILIACEÆ.*

118. *BERRYA MOLLIS*, Wall. Cat. 1186.

Arbor magna, novellis tomentellis ; folia cordato-rotundata, lata, circ. 6-7 poll. longa et lata, basi palmato-7-9-nervia, petiolata, petiolis 4-5 poll. longis dense puberulis v. tomentellis, obtusiuscula v. acuta, obsolete repanda et in lobos 2-3 breves obtusos producta, chartacea, adulta supra (nervis pubescentibus exceptis) glabra, subtus dense puberula v. subtomentosa ; flores c. 4-5 lin. in diametro, albi, paniculas laxas fulvo-tomentosas terminales formantes ; pedicelli longi, tomentosi ; calyx extus dense tomentosus, profunde 2-3-fidus, in alabastro subglobosus ; petala obovato-lanceolata, calyce longiora ; stamina numerosissima et conferta ; stylus simplex, glaber ; ovarium villosum ; capsulæ unacum alis oblique oblongis nervosis c. 2-2½ poll. in diametro, tomentellæ, siccæ, brunneæ ; semina globosa.—*Pegu*, *Martaban*.



## 119. GREWIA SCABRIDA, Wall. Cat. 1113 (pro parte).

Frutex ? novellis ferrugineo-tomentellis ; folia oblonga v. ovato-lanceolata, 5-6 poll. longa, petiolis brevibus ferrugineo-tomentosis, basi obtusa v. rotundata, serrata, acuminata, chartacea, utrinque (præsertim subtus) stellato-hirta et scabra, 3-nervia, venis transversis valde conspicuis ; flores circ. 8-10 lin. longi, pedicellis sulcatis ferrugineo-tomentosis et subfurfuraceis, 2-3-ni cymas parvas ferrugineo-tomentosas axillares formantes ; sepala 7-8 lin. longa, lineari-lanceolata, extus scabriuscule ferrugineo-tomentella ; petala circ. 2 lin. longa, lamina oblongo-lanceolata obtusa et a foveolâ latâ crassâ dense fulvo-villosâ usque ad basin fere separabilis ; gynophorum et ovarium fulvo-villosa ; drupæ profunde 4-lobæ, sed sæpe loborum unus alterve abortivus, lobis obtusis et divergentibus parce hispidis glabrescentibus, pollicem fere in diametro ; mesocarpium fibrosum, coccis monospermis.—*Martaban, Tenasserim.* Species *G. odorata*, Bl. (*G. umbellata*, Roxb.) et *G. columnari*, Sm. valde affinis, sub eodem nomine cum *G. pilosa*, Lamk., a cl. Wallichio distributa indeque a Wightio et Arnotto cum eadem confusa. *G. retusifolia*, Kurz in hocce diario, 1872, p. 294 proposita, foliis profunde retusis in sinu mucronatis insignis, teste cl. Mastersio ad *G. humilem*, Wall., speciem nondum descriptam, pertinet.

## 120. GREWIA MICROSTEMMA, Wall. ap. Voigt. Cat. Hort. Suburb. Calcutt. 128.

Frutex novellis scabro-puberulis ; folia oblonga v. ovato-lanceolata, basi inequali-rotundata, brevissime petiolata, 5-7 poll. longa, acuminata, duplicato-serrato-dentata, chartacea, utrinque (præsertim subtus) scabro-puberula, 3-nervia, cum nervo adjecto ad latus latius ; stipulæ petiolis fulvo-tomentosis longiores, subulatæ, strictæ, scabro-puberulæ ; flores parvi ; pedicelli tomentosi, breves ; cymæ multifloræ brevissime pedunculatæ 2-3-næ axillares ; sepala circ. 2 lin. longa, fulvo-puberula ; petala lineari-lanceolata, 1 lin. longa, longitudine foveolæ ovalis villosa-ciliatæ incrassatæ, dorso linea hirsuta notata ; stamina in floribus masculis 16 ; ovarium hirsutum ; drupæ....—*Pegu.*

121. COLUMBIA FLORIBUNDA, (*Grewia floribunda*, Wall. ap. Voigt. Cat. Hort. Suburb. Calc. 128 ; *Glossospermum* ? 5-alatum, Wall. Cat. 1154 et 7841).

Frutex scabro-stellato-hirtellus ; folia rotundata v. lato-obovato-oblonga, basi vulgo cordata, petiolis longiusculis gracilibus scabris, acuta v. brevo acuminata v. obtusa, apicem versus sæpius in lobos 2 v. unicum obtusum v. truncatum raro acutum producta, distanter dentata, basi vulgo 7-nervia, membranacea, supra stellato-scaberrima, subtus plus minus pilis stellatis puberula et mox scabrescentia ; flores parvi, pedicellis gracilibus brevibus

tomentellis, in cymulas pedunculatas dispositi et paniculam terminalem laxam canescenti-puberulam efficientes; sepala lineam circiter longa, extus canescenti-tomentella; petala obovato-oblonga, obtusa, sepalis subæquilongæ, basi foveola minuta incrassata villosa-ciliata aucta; capsulæ 7-9 lin. in diametrò, stellato-puberulæ, scabræ, siccæ, maturæ in carpidia 3-4 indehiscentia monosperma bialata separantes.—*Ava, Martaban.*

122. *EVODIA VITICINA*, Wall. Cat. 1219.

Frutex? glaber, ramulis lineis 4 acute prominentibus notatis; folia 3-v. uni-foliolata in eodem v. diversis ramulis, opposita, glabra, petiolis  $\frac{1}{2}$ — $\frac{3}{4}$  poll. leviter alatis; foliola 2-3 $\frac{1}{2}$  poll. longa, lanceolata v. obovato-lanceolata, basi attenuata et subsessilia, membranacea, breve acuminata, subtus pallida; paniculæ contractæ et parvæ, puberulæ, petiolis v. multo breviores v. subæquilongæ; flores parvi, brevissime pedicellati; petala 4, lineari-oblonga, obtusa, subcoriacea; carpella....—*Tenasserim.*

123. *LIMONIA ALTERNIFOLIA*, Wall. ap. Voigt. Hort. Calcutt. 139.

Fruticulus gracilis, simplex v. parce ramosus, deciduus, inermis, glaber-rimus; folia impari-pinnata, rachide anguste alata; foliola 5-7-juga cum impari, alterna, subsessilia, oblongo-lanceolata ad lanceolata, oblique acuminata, crenata, glabra, 1-1 $\frac{1}{2}$  poll. longa, pellucido-punctata; flores pentameri, parvi, albi, e ramulis novellis axillaribus brevibus orientes et cymam brevem glabram breve pedunculatam v. subsessilem efformantes; calycis lobi trigono-oblongi, acuta,  $\frac{1}{2}$  lin. longi; petala 3 lin. longa, acutiuscula; stamina 10, alternatim breviora, filamenta basi intus parce puberula; ovarium obovatum, compressiusculum, læve, toro brevi crasso insidens, 2-loculare, loculis ovulo solitario pendulo; stylus curvus, stigmatibus incrassato; torus post præflorationem productus; baccæ....—*Pegu.*

*SIMARUBEÆ.*

124. *BRUCEA MOLLIS*, Wall. MS.

Fruticulus simplex v. subsimplex, 2-3 pedalis, novellis puberulis v. pubescentibus; folia imparipinnata, petiolus rachisque teres puberuli, glabrescentes; foliola 4-6-juga cum impari, ovato-oblonga v. ovato-lanceolata, longiuscule petiolulata, acuminata, integerrima, membranacea, supra sparse, subtus densius, pubescentia v. præter nervos pubescentes glabra, 2-3 poll. longa; flores minuti, graciliter pedicellati, racemos puberulos v. pubescentes simplices graciles folio multo breviores axillares formantes; drupæ solitariæ v. binæ, rarius ternæ, ovatæ, pisi majoris magnitudine v. majores.—*Martaban.* *Brucea* genus magis ad *Tapiriam* inter *Anacardiaceas* spectat.

*MELIACEÆ.*

125. *CHICKRASSIA VELUTINA*, (Swietenia velutina et S. villosa, Wall. Cat.).

Species mihi bona, a Ch. tabulari distinguitur novellis, foliis etc. molli-ter pubescentibus, foliolis numerosioribus supra velutinis subtus molliter pubescentibus; paniculis ferrugineo-tomentosis; floribus majoribus; petalis obovato-oblongis 5-6 lin. longis; calyce dense fulvo-tomentoso; capsulis atris, sublævibus.—*Pegu*, etc.

*CELASTRINEÆ.*

126. *MICROTROPIS LONGIFOLIA*, Wall. Cat. 4339 (pro parte).

Frutex? glaber; folia oblongo-lanceolata v. oblonga, petiolis crassis 4-5 lin. longis, breve acuminata, basi acuta, 6-7 poll. longa, integra, coriacea, utrinque (præsertim supra) rugulosa, opaca; flores breve cymosi; pedunculus 4-6 lin. longus; capsulæ obovatæ; testa seminis rubra.—*Tenasserim*. *G. latifoliæ*, Gais., in Hb. Kew assimilis, nervatione autem diversa.

*AMPELIDEÆ.*

127. *LEEÆ COMPACTIFLORA*, nov. sp.

Arbuscula *L. sambucinæ* valde affinis, sed foliola angustiora, argute serrato-dentata, longe acuminata; inflorescentia petiolo multo brevior, ferrugineo-tomentosa; flores viridiusculi, sessiles, bracteis latis brevibus ovatis acutis subscariosis circumdati et in glomerulos compactos congesti; fructus non adsunt.—*Martaban*.

128. *LEEÆ GIGANTEA*, Griff. Not. Dicot. 697. t. 645, f. 3.

Frutex simplex, elatus, glaberrimus; folia largissima, supra-decomposita, petiolus compressiusculus lævis; foliola vulgo magna, 6-8 poll. longa, petiolulis  $\frac{1}{2}$  (terminali usque ad 2) poll. longis, oblonga ad oblongo-lanceolata, breve et abrupte acuminata, basi acuta, grosse crenato-serrata, tenui-coriacea, glaberrima, lucida, siccando nigrescentia, nervis subtus prominentibus; flores parviusculi, virescenti-albidi, pedicellis brevissimis robustis v. subsessiles, in cymam amplam diffusam 2-3-chotomice ramosam glaberrimam axillarem v. subterminalem petiolorum longitudine v. longiorem dispositi; bracteæ bracteolæque ante anthesin caducissimæ; calycis lobi breves, rotundati v. subacuti, glabri; petala reflexa, lineam circiter longa; lobi tubi staminum triangulari-lanceolati, acuminati, apice integro reflexi; baccæ depresso-globosæ, 4-6 spermæ; semina obtuse carinata, lateribus tuberculato-costatis.—*Tenasserim*.

129. *LEEÆ LETA*, Wall. Cat. 6831.

Frutex humilis, 2-3 pedalis, glaber; folia bipinnata, petiolis teretibus; foliola petiolulis 1-2 lin. longis, oblongo-ad ovato-lanceolata, 5-8 poll. longa,

basi rotundata subinequalia, acuminata, crenato-serrata, membranacea, glabra siccando magis minusve rubescentia; flores parvi, rubri, pedicellis brevibus tomentosis, cymas compositas breves sessiles v. pedunculatas compactiusculas v. raro diffusas axillares efficientes; bractæ bracteolæque ante anthesin caduæ; calycis lobi triangulares, acuti, glabri; petala lineam fere longa; tubi staminei lobi emarginati; baccæ desunt.—*Burma, Andamans.*

130. *LEEAE SANGUINEA*, Wall. ap. Voigt. Cat. Suburb. Calcutt. 30.

Herba perennis, caulibus crassis teretiuseculis, glabra; folia inferiora decomposita, superiora impari-pinnata, summa sæptus ternata, petiolis, petiolulis rachique anguste membranaceo-4-alatis; foliola vulgo 3-juga cum impari, elliptico-oblonga ad oblongo-lanceolata, terminali longius petiolulato sæpius ovato-oblongo, brevissime petiolulata v. subsessilia, 6-8 poll. longa, acuta, argute serrata, glabra, nervis parallelis venisque transversis subtus valde prominentibus; cymæ vulgo a basi ramosæ v. pedunculatæ, trichotomo-ramosæ, pedunculis et ramificationibus purpurascensibus compresso-angulatis glabris; bractæ, bracteolæque ante anthesin deciduæ; flores parvi, coccinei, pedicellis brevibus crassis glabris suffulti; calyx 5-dentatus, coccineus, lobis acutis; petala coccinea, lineam circiter longa; tubus stamineus cerino-albus, lobis emarginatis; filamenta subpurpurascens; baccæ depresso-globosæ, pisi magnitudinis, vulgo 6-spermae, aurantiacæ.—*Ava.*

N. B.—*Vitis Wallichii*, Kurz in hocce diario 1872, p. 302 (*Leea cordata*, Wall. Cat. 6819) ad *V. Linnæi* formas probabiliter reducenda, a quibus autem cymis axillaribus (nec oppositifoliis) differre videtur.

### *ANACARDIACEÆ.*

131. *MANGIFERA CALONEURA*, nov. sp.

Arbor mediocris, glabra; folia oblonga ad oblongo-lanceolata, 3-5 pollicaria, petiolo basi valde incrassato  $1\frac{1}{2}$  poll. suffulta, obtuse acuminata, coriacea, glabra, utrinque elegantissime minute et prominenter reticulata, costâ crassa lata præsertim supra prominente et subplana percursa, nervis lateralibus vix curvis 18-20, tenuibus; flores parvi, sessiles v. subsessiles paniculam terminalem tomentosam amplam formantes; calyx pubescens; petala lanceolata, acuta, reflexa, lineam circiter longa, ciliolata, alba, medio linea citrina percursa; stamen 1, anthera atropurpurea; discus 5-lobus, lævis; drupæ ovi gallinacæ magnitudine subreniformi-ovoidæ, læves, obtusæ, aurantiacæ v. luteæ, acido-dulces, subteretes.—*Pegu, Martaban.* M. Indicæ affinis, reticulatione elegantissima statim recognoscenda.

N. B.—*Bouea Brandisiana*, Kurz in Journ. As. Soc. 1871, p. 50, ad *B. Burmanicam*, Griff. in hocce diario, 1854, p. 634, referenda.

*LEGUMINOSÆ.*132. *MILLETTIA MONTICOLA*, nov. sp.

Frutex alte scandens, deciduus, novellis parce ferrugineo-pubescentibus glabrescentibus, ramis verrucosis; folia novella (adulta non visa) imparipinnata; foliola 4-3-juga cum impari, petiolulata, oblonga, breve acuminata, subtus secus nervos adpresse fulvo-pubescentia; flores azurei, parviusculi, pedicello 1-2 lin. longo ferrugineo-tomentoso suffulti, fasciculati, in racemos simplices solitarios ferrugineo-tomentellos 4-7 pollicares supra foliorum delapsorum cicatricibus orientes dispositi; calyx parce ferrugineo-tomentosus, 2-2½ lin. longus, longior quam latus, obsolete et lato-dentatus, denticulo anteriore paullo producto; corolla glabra, vexillo circiter semipollicari; ovarium tenuiter ferrugineo-pubescent; legumina desunt.—*Martaban.* *M. pachycarpæ*, Bth., arcte affinis.

133. *MILLETTIA LEIOGYNA*, nov. sp.

Frutex deciduus alte scandens novellis ferrugineo-tomentosis; ramis teretibus minute lenticellatis; folia novella (adulta desunt) ferrugineo-tomentosa, imparipinnata; foliola 4-6-juga cum impari; flores majusculi, violacei, vexillo in fundo luteo, pedicellis 2-3 lin. longis nutantibus velutinis suffulti, racemos 4-5 pollicares fulvo-tomentosos e ramulis abbreviatis lateralibus ortos formantes et sæpius in paniculam amplam lateralem collecti; calyx latior quam longus, 2-2½ lin. longus, fulvo-velutinus, obsolete dentatus, dente anteriore paullo producto; corolla glabra, vexillum ½ poll. longum, emarginatum; ovarium læve; legumina juniora linearia, læves, subulato-acuminata.—*Martaban.* *M. extensæ*, Bth., affinis.

134. *MILLETTIA GLAUDESCENS*, nov. sp.

Arbor magna, decidua, glabra v. sæpius novellis parce pubescentibus; folia imparipinnata, ½-1 ped. longa, glabra, v. rachi et petiolulis parce puberulis; folia elliptica ad obovato-oblonga et oblongo-lanceolata, vulgo 3-4-raro 2-juga cum impari, obtusiuscule et subabrupte acuminata v. apiculata, petiolulis 2-3 lin. longis gracilibus glabrescentibus, integra, 3-4 poll. longa, membranacea, glabra v. subtus secus costam subpubescentia, subtus glaucescentia; flores parviusculi, cyanei, pedicellis capillaribus puberulis v. subglabris 3-4 lin. longis, in racemos graciles glabros v. puberulos solitarios v. secus ramulos novos aphyllis aggregatos dispositi; calyx latior quam longus, parce pubescens, 1-1½ lin. longus, obsolete lato-dentatus; corolla glabra; vexillum obsolete emarginatum, ½ poll. fere longum; ovarium adpresse sericeum; legumen oblongum, basi attenuatum, lignosum, incurvato-acutum, planum, suturis in alas angustissimas dilatatis undeque quasi subquadrangulare-alatum, glabrum, lenticellis rimosis sparse obtectum, 3-4 poll. longum, 2-3 lin. crassum, 1-3-spermum.—*Pegu, Martaban.*

135. *MILLETTIA PUBINERVIS*, nov. sp.

Arbuscula 20-25 pedalis, novellis puberulis; folia impari-pinnata, c.  $\frac{1}{2}$  ped. longa, rachi puberula; foliola elliptico-ad obovato-oblonga, petiolulis gracilibus 1-2 lin. longis puberulis, longiuscule et obtusiuscule acuminata, 2-3 poll. longa, tenuiter chartacea, integra, subtus glauca et secus costam pubescentia; flores parviusculi, luride lutescenti albi, pedicellis capillaribus pubescentibus, solitarii v. fasciculati, racemos solitarios oppositifolios graciles luteo-pubescentes  $2\frac{1}{2}$ -3 poll. longos formantes; calyx rubicundus, latior quam longus, circ.  $1-1\frac{1}{2}$  lin. longus, parce pubescens, obsolete sinuato-dentatus; corolla glabra; vexillum plus quam  $\frac{1}{2}$  poll. longus; ovarium adpresse pubescens; legumen deest.—*Martaban.*

136. *MILLETTIA LEUCANTHA*, nov. sp.

Arbor mediocris, novellis sericeo-pubescentibus glabrescentibus; folia impari-pinnata,  $\frac{1}{2}$ - $\frac{3}{4}$  ped. longa, juniora subtus sparse pubescentia, mox glabrescentia; stipellae subulatae, rigidae, diutius persistentes; foliola ovata ad elliptica, ut plurimum 3-juga cum impari, longius petiolulato, breve et subabrupte acuminata, petiolulis c. 2 lin. longis puberulis glabrescentibus, 3-4 poll. longa, rigide chartacea, adulta glaberrima, integra, subtus saepius pallida; flores fasciculati majusculi, candidi, pedicellis 2-3 lin. longis cinereo-velutinis; racemi solitarii, cinerascens pubescentes, erectiusculi, 2-4 poll. longi, in ramulis lateralibus terminales v. laterales; calyx canescenti-velutinus, c.  $2\frac{1}{2}$  lin. longus, dentibus 3 inferioribus distinctis, acutiusculis, 2 superioribus connatis lato-ovatis; corolla glabra; vexillum  $\frac{1}{2}$  poll. fere longum, integrum; ovarium adpresse sericeum; legumen lignosum, oblongum ad obovato-oblongum, acutum, glabrum, lenticillato-scabrum,  $1\frac{1}{2}$ -3 poll. longum, marginibus uti in *Pongamia obtusis*, 1-3 spermum; semina plana, brunnea.—*Prome, Pegu.*

137. *MILLETTIA OVALIFOLIA*, (*Pongamia ovalifolia*, WA. Prod. I. 262; Wight Jc. t. 328.)

Arbor mediocris, glabra; folia impari-pinnata,  $\frac{1}{2}$ - $\frac{1}{2}$  ped. longa, glabra; foliola ovata ad elliptica et elliptico-ovata, petiolulis 1-2 lin. longis gracilibus, 3 (sec. WA. etiam 4)-juga cum impari, breve acuminata, apiculata v. obtusiuscula,  $\frac{1}{2}$ -1 poll. longa, chartacea, integra, subtus subglaucescentia, subtiliter reticulata; flores solitarii v. subfasciculati cyanei, parviusculi, pedicellis capillaribus 2-3 lin. longis; racemi graciles, glabri, 2-3 poll. longi, solitarii v. plures e ramulis novellis orti; calyx glaber, purpurascens, latior quam longus, c. 1 lin. longus, obsolete dentatus v. subtruncatus; corolla glabra, vexillum c.  $\frac{1}{4}$  poll. longum; ovarium parce adpresse pubescens; legumen lineari-oblongum, basin versus attenuatum, incurvato-acutum, planiusculum suturis obtusis, sublignosum, glabrum, pallidum, sparse verrucoso-lenticillatum, 2-3 poll. longum, ad medium 2-3-spermum.—*Prome.*

138. *MILLETTIA BRANDISIANA*, nov. sp.

Arbor mediocris, gemmis cupreo v. fulvo-pubescentibus, cæterum glabra; folia impari-pinnata,  $\frac{1}{2}$ -1 ped. longa, glabra; stipellæ subulatæ, diutius persistentes; foliola 7-10-juga cum impari, oblongo-lanceolata, petiolulis lin. longis puberulis, obtuse acuminata,  $1\frac{1}{2}$ -2 $\frac{1}{2}$  poll. longa, integra, juniora membranacea et subtus parce minuteque puberula, demum rigide sed tenuiter coriacea, glaberrima, subtus glaucescentia; flores cyanei, majusculi, pedicellis crassiusculis 2-3 lin. longis glabris suffulti, fasciculati, racemos 4-8 poll. longos glabros secus ramulos novellos distributos formantes; calyx purpureus, glaber, c. 2 lin. longus, tomentosus-fimbriatus, dentibus conspicuis, anteriore magis producto, posterioribus brevibus lateque connatis; corolla sericeo-pubescenti; vexillum  $\frac{1}{2}$  poll. fere longum; ovarium adpresse pubescens; legumen obovato-oblongum ad oblongum et oblongo-lanceolatum, basi plus minusve attenuatum, rigide coriaceum, valde planum, subabrupte incurvato-acuminatum, 2-3 poll. longum, suturis haud incrassatis, brunnescens, læve, 1-3-spermum.—*Pegu. M. pulchræ* (= *Mundulea pulchra*, Bth.) affinis.

139. *MILLETTIA TETRAPTERA*, nov. sp.

Arbor mediocris, novellis molliter pubescentibus; folia impari-pinnata,  $\frac{1}{2}$ - $\frac{3}{4}$  ped. longa, juniora molliter tomentella; foliola 3-(raro 2-1) juga cum impari, obovata ad elliptico-obovata, petiolulis crassis 1-2 lin. longis tomentosis, apice rotundata, subemarginata v. rarius apiculata, integra, novella membranacea et utrinque canescenti-tomentella, demum rigide chartacea et supra glabrescentia; flores fasciculati parviusculi, pallide lilacini, pedicellis 2-3 lin. longis dense pubescentibus; racemi 3- $\frac{1}{2}$  poll. longi, fulvo-v. gilvescenti-tomentosi secus ramulos foliatis novellos siti v. apicibus oppositifolii; calyx latior quam longus,  $1\frac{1}{2}$  lin. longus, tomentosus, obsolete sinuato-dentatus v. subtruncatus; corolla glabra; vexillum c.  $\frac{1}{2}$  poll. longum; ovarium adpresse pubescens; legumen subcuneato-oblongum, basi sterili attenuatum, lignosum, incurvato-acutum, 3-4 poll. longum, pallidum, læve, marginibus in alas irregulares lignosas sæpius undulatas angustas dilatatum et quasi tetrapterum, 1-2 spermum.—*Ara, Prome.*

140. *ERYTHRINA HOLOSERICEA*, nov. sp.

Arbor aculeato-armata, novellis furfuraceo-puberulis; folia iis *E. lithospermæ* conformia, 3-foliolata, petiolo 3-4 poll. longo, glabra: foliola plus minusve ovata, petiolulis 2-3 lin. longis, acuminata, 3-5 poll. longa, integra, chartacea v. membranacea, glabra; flores magni, coccinei? alis carinaque purpureis, subsessiles, 2-3-ni fasciculati, in racemo fulvo farinaceo-tomentoso collecti; calyx resupinatus, brevi-spathaceus brunneo-villosus, intus fulvescenti-sericeus; vexillum  $1\frac{1}{2}$  poll. fere longum, obovato-cuneatum, obtusum, minute-velutinum; alæ falcato-oblongæ, obtusæ, c.  $\frac{1}{2}$  poll. longæ; carina

c.  $\frac{3}{4}$  pollicaris, e petalis 2 oblique oblongis acutiusculis breve unguiculatis medio tantum connatis composita; stamina monadelpha; ovarium fulvotomentellum; legumen deest.—*Pegu*. Ex affinitate *E. lithospermæ*, Miq., (= *E. Sumatrana*, Miq.) vix Bl. cujus planta e Mauritio in Hort. Bog. allata fuerat. (cf. Bl. Cat. Buitenz.)

141. *DALBERGIA CANA*, Gräb. in Wall. Cat. 5859.

Arbor magna, novellis pubescentibus glabrescentibus; folia impari-pinnata; juniora parce pubescentia, mox glabrescentia, 1-2 ped. longa; foliola 7-9-juga, alterna, petiolulis 1-1 $\frac{1}{2}$  lin. longis glabrescentibus, oblonga ad ovato-v. lineari-oblonga, sæpius subinæqualia, breve et subabrupte acuminata, 2-2 $\frac{1}{2}$  poll. longa, integra, chartacea, adulta glabra v. subtus subpuberula; flores parvi, luride purpurei, pedicellis capillaribus puberulis 1-2 lin. longis suffulti, paniculam laxam puberulam breve pedunculatam axillarem v. sub-lateralem formantes; calyx atropurpureus, glaber v. subglaber, c. 2 lin. longus, dentibus obtusis; corolla glabra, 3 lin. fere longa, petalis longe unguiculatis; stamina 10, diadelpha; ovarium pilosum; legumen lineari-oblongum, planum, 3-1-spermum, obtusum, basi in stipitem brevem constrictum 3-4 poll. longum, fulvo-velutinum, circa semina indistincte venosum.—*Pegu Martaban, Tenasserim*.

142. *DALBERGIA GLOMERIFLORA*, nov. sp.

Arbor mediocris, decidua, novellis fulvescenti-tomentosis; folia juvenilia tomentosa glabrescentia, impari-pinnata; folia 3-4-juga, alterna, ovata ad elliptica et obovata, petiolulis parce pubescentibus 1-2 lin. longis, acuta, 2-2 $\frac{1}{2}$  poll. longa, integra, tenuiter coriacea, supra glabra, subtus parce puberula; flores parvi, albi, pedicellis brevissimis, v. subsessilibus, in paniculas subcapitatas ramulos novos villosos terminantes conglomerati; calyx c. 1 $\frac{1}{2}$  lin. longus, glaber, dentibus obtusis; corolla glabra, calyx paullulo longior, petalis brevissime unguiculatis; stamina 10, diadelpha; ovarium glabrum; legumen desideratur.—*Prome*.

*ARILLARIA*, gen. nov.

Calyx amplus, dentibus 2 superioribus paullo majoribus. Vexillum suborbiculare, alæ carinaque subconformes, securiformi-falcatae; petala omnia breve unguiculata et libera. Stamina 10, libera, inæqualia, omnia fertilia; antheræ versatiles. Ovarium brevi et crasse stipitatum, 2-ovulatum; stylus filiformis, revolutus, stigmatē laterali. Legumen oblongum, teres, carnosum-coriaceum, utrinque dehiscens. Semina 2 v. abortu ut plurimum solitaria, magna, oblonga, nigra, arillo caroso miniato complete involutum. Cotyledones crassæ, radícula centrifugalis.—Arbor foliis impari-pinnatis, foliis oppositis stipellatis. Flores majusculi, albi, racemosi, in paniculas terminales collecti. Genus juxta *Ormosiam* ponendum, arillo insigne, unde nomen.



*Chænolobii* species ambæ a cl. Miquelio confectæ ad *Ormosiam coarctatam*, Jack, reducendæ.

143. A. ROBUSTA, (*Sophora robusta*, Roxb., Hort. Beng. 31; Wight Jc. t. 245; *Ormosia floribunda*, Wall. Cat. 5337.)

Arbor mediocris sempervirens, novellis fulvo-velutino-tomentosis; folia impari-pinnata, 1-1½ ped. longa, rachi fulvescenti-pubescente; stipellæ persistentes, c. 2 lin. longæ, lineari-subulatæ, pubescentes; foliola 4-5-juga, oblonga, petiolulis crassis 2 lin. longis pubescentibus, acuta v. apiculata, 3-4 poll. longa, integra, tenuiter coriacea, adulta supra glabra, subtus fulvescenti-puberula; flores majusculi, luride albi, pedicellis brevibus crassis tomentosis suffulti, racemosi, in paniculam terminalem robustam ferrugineo-v. fulvo-tomentosam collecti; bractæ persistentes, lineares, tomentosæ, 2-3 lin. longæ; calyx amplus, 3 lin. fere longus, dense tomentosus; corolla glabra, c. 3 lin. longa; ovarium villosum; legumen oblongum v. elliptico-oblongum, basi in stipitem brevem pubescentem crassum contractum, acutum, carnosocoriaceum, luteum v. gilvum, parce pubescens v. subglabrum, mono-rarissime 2-spernum; semen magnum, oblongum, aterrimum, lucidum, arillo miniato dein sanguineo carnosio completè involutum.—*Pegu, Tenasserim.*

144. PTEROLOBIUM MACROPTERUM, nov. sp. (*P. lacerans*, Miq. Fl. Ind. Bat. I. 106, non R. Br.)

Frutex magnus scandens, aculeis brevibus armatus, novellis parce pubescentibus; folia ½-¾ ped. longa, abrupte bipinnata, pinnis 7-8 v. pluribus rachibus aculeatis puberulis; foliola 7-9 v. pluri-juga, sessilia, inæquali-oblonga v. elliptico-oblonga, ½-¾ poll. longa, apice rotundata v. retusa, membranacea, glabra, subtus pallida; flores albi, parvi, breviter pedicellati, racemos axillares solitarios (glabros?) efficientes; legumina samaroidea, basi seminifera plus quam ½ poll. longa, elliptico-oblonga, ala sesquipollicari, pollicem fere lata, semi-oblonga, apice rotundata, sutura interiori recta, nec arcuata.—*Pegu, Martaban, Tenasserim.*

Species Indicæ 3 mihi notæ, nempe, *P. microphyllum*, Miq. (Hb. Maingay No. 535) racemis in paniculis terminales amplas dispositis, et *P. lacerans*, R. Br. (Wight Icon. t. 196), cum specie nova supra descripta racemis axillaribus solitariis conjunctum, leguminibus autem valde discrepans.

145. CASSIA RENIGERA, Wall. Cat. 5307; Bth. in Linn. Trans. XXVII. 518.

Arbor mediocris, novellis molliter pubescentibus; folia abrupte pinnata, ½-1 pod. longa, molliter pubescentia; stipulæ magnæ, lunato-reniformes, deciduæ; foliola 8-20-juga, petiolulis brevissimis, v. sessilia, elliptico-oblonga ad oblonga, obtusa v. retusa cum mucrone minuto, ½-1½ poll. longa,

membranacea, molli-pubescentia; flores speciosi, purpurei, pedicellis 1-1½ pollicaribus pubescentibus, in racemos solitarios v. geminatos supra foliorum delapsorum cicatricibus ortos pubescentes brevissimos dense bracteatos collecti; bracteae cordato-ovatae, longe acuminatae, pubescentes; calyx breve denseque pubescens; petala oblonga, pollicem fere longa, obtusiuscula; ovarium filamentaque glabra; filamenta longiores medio incrassata; legumen cylindricum, 1-2 ped. longum, indehiscens, glabrum.—*Ava, Prome.*

146. *BAUHINIA ROSEA*, nov. sp.

Frutex scandens, novellis fulvo-puberulis; folia cordato-rotundata, usque ad ½ partem biloba, lobis rotundatis cum aristâ brevi in eorum sinu auctis, petiolo 1½-2 pollicari puberulo, 3-5 poll. longa et lata, integra, chartacea, juniora supra fugaci-pubera mox glabra, subtus fulvescenti puberula; flores parviusculi, rosei, pedicellis 1½-2 poll. longis gracilibus adpresse puberulis, racemum terminalem bracteatum corymbiformem fulvo-pubescentem formantes; bracteae lineari-lanceolatae, acuminatae, c. 4 lin. longae; calyx adpresse fulvo-puberulus, tubo brevi, lobis in alabastro tereti-ovoideis, dein liberis et reflexis 4 lin. longis lineari-lanceolatis; petala longe unguiculata, obovato-linearia, undulata, utrinque parce adpresse pubescentia, c. ¾ poll. longa; ovarium cum stylo crasso brevi (ovario breviori) fulvo-villosum; legumen deest.—*Martaban.* (Dr. Brandis.) *A. B. Vahlîi* inter alia differt stylo et floribus minoribus.

147. *BAUHINIA ORNATA*, nov. sp.

Frutex alte scandens cirrhiferus, novellis ferrugineo-pubescentibus; folia cordato-ovata ad cordato-rotundata, petiolo 1½-3 poll. longo in juventute ferrugineo-pubescente suffulta, usque ad ½ v. ⅔ partem biloba, lobis obtusiusculis v. obtusiuscule acuminatis et in sinu aristatis, 4-7 poll. longa et lata, integra, chartacea, juniora subtus parce adpresse ferrugineo-pubescentia, mox glabrescentia, palmatis 11-15-nervia; flores parvi, albi, pedicellis gracilibus 1-1½ pollicaribus, ferrugineo-pubescentibus, apice pedunculi longioris v. brevioris glabrescentis in racemum corymbiformem multiflorum bracteatum fulvo-pubescentem lateralem v. terminalem congregati; bracteae lineari-lanceolatae, pubescentes, c. 2 lin. longae; calyx in alabastro pyriformis, adpresse pubescens, lobis ovatis c. 3 lin. longis reflexis; petala obovato-oblonga, extus parce pubescentia, subundulata, c. 4 lin. longa; ovarium fulvo-villosum, stylo longo gracilique glabro; legumen non repertum.—*Pegu.*

148. *BAUHINIA INVOLUCELLATA*, nov. sp.

Frutex scandens, novellis parce puberulis; folia cordato-ovata, petiolo glabro 1½-2 poll. longo, usque ad ¾-¾ partem biloba, lobis obtusiuscule acuminatis in sinu aristatis, 3-4 poll. longa, integra, tenuiter chartacea, glabra, palmatis 9-11-nervia; flores majusculi, pallide rosei, pedicellis 2-2½ polli-

caribus puberulis glabrescentibus infra apice bibracteolatis suffulti, racemum longiorem v. breviorum laxum terminalem puberulum glabrescentem formantes; bracteae minutae, indistinctae; bracteolae sub calyce elliptico-oblongae, obtusiusculae,  $\frac{1}{2}$  poll. longae, intus velutinae, quasi involucrium bifoliatum formantes; calyx velutinus, tubo sulcato-tubulari, c. 3 lin. longus v. longior, lobis in alabastro oblongo-ovato lanceolatis acuminatis  $\frac{1}{2}$  poll. longis dein liberis et reflexis; petala  $1\frac{1}{2}$  poll. fere longa, lamina ovato-oblonga, obtusa, unguis longitudine; ovarium laeve, stylo longiusculo sed crasso; stamina fertilia 3; legumen desideratur.—*Martaban* (Dr. Brandis).

149. *BAUHINIA MONANDRA*, non. sp.

Frutex? novellis puberulis; folia parva, rotundato-ovalia, basi truncata, petiolo  $\frac{1}{2}$ -1 pollicari brevis pubescente, usque ad  $\frac{1}{2}$  partem biloba, lobis rotundatis in sinu aristatis,  $1-1\frac{1}{2}$  poll. longa, integra, chartacea, supra glabra, subtus praesertim secus nervos brevis pubescentia, palmatim 11-nervia; flores majusculi, albi? petalo inferiore maculato, pedicellis  $1-1\frac{1}{2}$  pollic. longis dense puberulis, racemos breves terminales pubescentes formantes; bracteae parvae, subulatae; calyx extus tomentellus, in alabastro fusiformis, spathaceus; petala obovato-cuneata, c.  $1\frac{1}{2}$  poll. longa, glabra, undulata, stamen perfectum unicum tantum, caetera omnia rudimentaria; ovarium stipitatum fulvo-villosum, suturis laevibus, stylo gracili ovarii ipsius duplo longiore terminatum; legumen deest.—*Burma, Martaban?* (Dr. Brandis). Ex affinitate *B. tomentosa*, cum *B. brachycarpa*, Wall., ultro comparanda.

150. *AFZELIA REFUSA*, nov. sp.

Arbuscula glaberrima; folia abrupte pinnata, rachi brevissima glabra; foliola uni- v. bijuga, plus minusve ovalia, sub-obliqua, brevissime petiolulata,  $1\frac{1}{2}$ -2 poll. longa, integra, chartacea, emarginata, glabra; flores parviusculi, albidii pedicellis c. 4 lin. longis glabris, racemos breves simplices glabros in ramulis terminales efficientes; bracteolae sub calyce 2 parvae, concavo-cymbiformes, persistentes; calyx laevis, tubo c. 4-lin. longo, lobis obovato-oblongis aequi-longis; legumen 3-4 poll. longum,  $1-1\frac{1}{2}$  poll. latum tenuiter coriaceum, oblongum, secus margines incrassatos subcurvum, glabrum.—*Andamans.*

151. *PARKIA LEIOPHYLLA*, nov. sp.

Arbor vasta, 80-120 pedalis, novellis pubescentibus; folia abrupte bipinnata, 1-2 pedalia, pinnis c. 20 v. pluribus suboppositis, rachibus brevis pubescentibus; foliola c. 30-40, sessilia, opposita, lineari-oblonga, subfalcata, basi oblique auriculata,  $\frac{1}{2}$  poll. longa, c. 2 lin. lata, oblique acuta, tenuiter coriacea, glaberrima, unicastata cum nervo solitario basilari laterali, penninervia; flores parvi, flavescentes, in receptaculo irregulari-globozo basi

in stipitem pollicem fere longo contracto sessiles et capitulum densiflorum clavatum longe-pedunculatum formantes; pedunculi 1-1½ pedales, glabri, racemosi, terminales; calyx 4 lin. fere longus, tubo glabro, lobis rotundatis extus dense fulvo-tomentosis; legumen 1-1½ ped. longum, lineare, in stipitem ½-¾ pedalem attenuatum, apice rotundatum, glabrum et subvernicosum, nigrum, inter semina numerosa torosum.—*Pegu.*

152. *PARKIA INSIGNIS*, nov. sp.

Arbor vasta, 80-100-pedalis, novellis fulvo-pubescentibus; folia abrupte bipinnata, 1-2-pedales, pinnis c. 8 suboppositis, rachibus fulvo-v. ferrugineo-tomentosis; foliola 20-25 juga, subopposita, subfalcata, oblonga, cum basi inæquali sub-auriculata sessilia, apice rotundata, 1 poll. longa, ¼ poll. lata, integra, coriacea supra nervis exceptis glabra, subtus pubescentia, penninervia, nervis arcuatim anastomozantibus; flores parvi, lutei in receptaculo clavato-orbiculari basi in stipitem pollicarem attenuato sessiles et capitulum clavato-pyriformem longe pedunculatum efformantes; pedunculi pedales, plures ex apice ramorum orientes; calyx c. 4 lin. longus, tubo glabro v. subglabro, lobis obovato-cuneatis adpresse fulvo-pubescentibus; legumina non vidi.—*Martaban.*

153. *ALBIZZIA (Pithecolobium) GLOMERIFLORA*, nov. sp.

Frutex 2-5-pedalis, novellis puberulis, ramulis subangularibus v. teretibus; folia abrupte bipinnata, pinnis unijugis, petiolus 1-1½ pollicaris, rachibus vix angularibus præsertim junioribus puberulis; foliola 3-raro 2-juga, petiolis brevissimis puberulis, oblique oblongo-lanceolata ad subrhomboideo-lanceolata breve mucronato-acuminata, 1-2 poll. longa, tenuiter et rigide coriacea, adulta glabra v. subglabra, v. secus costam puberula, subtus glaucescentia et secus nervos pubescentia; flores parvi, virescenti-albi, sessiles, in capitula pisi magnitudinis pedunculis gracillimis ½-1 pollicaribus puberulis instructa congregati et in racemos graciles puberulos axillares dein sæpius paniculam terminalem foliatam simulantes dispositi; calyx vix ½ lin. longus, pubescens; corolla usque ad calycis limbum lobata, extus pubescens, c. 1½ lin. longa; legumina non adsunt.—*Martaban.*

*RUBIACEÆ.*

154. *PAEDERIA CALYCINA*, nov. sp.

Herba volubilis, novellis puberulis; folia cordato-ovata ad cordato-lanceolata, petiolo 1-1½ pollicari puberulo suffulta, basi sinuato-cordata, acuminata, 2-3 pollicaria, integra, membranacea, utrinque præsertim subtus parce hispidula; flores ... superiores pedicellati, lateralibus sessilibus v. subsessilibus, in cymas dichotomas secundas parvas parce hirsutas digesti, et paniculas thyrsoides brachiatas hirsutulas axillares et terminales efformantes;

calyx indistincte puberulus, tubo c.  $\frac{1}{2}$  lin. longo v. longiore, lobis fere duplo longioribus, lanceolatis, subfoliaceis; corolla ...; capsulæ ovoidæ, c. 4 lin. longæ, compressæ, brunneæ et lucidæ, calycis limbo conspicuo coronatæ; semina capsulis conformia, alâ nigrescenti c.  $\frac{1}{2}$  lin. latâ circumdata.—*Tenasserim* (Wall. Cat. 6247 E).

Rubiacearum genera 44 in regno Burmanico occurrentia mihi cognita sunt, quorum conspectum hic addo:—

Trib. I. *STELLATAE*. Calyx ovario omnino adnatus, v. limbo 4-6-fido. Corollæ lobi valvati, ovarium 2-loculare, ovulis in loculis solitariis erectis, adscendentibus v. raro pendulis. Drupa indehiscens, sicca v. succulenta. Semina exalata et libera, v. raro membrana alatum-expansa circumdata.—Stipulæ ut plurimum in folia stipulacea transformata et foliis conformes v. subconformes, hinc cum foliis verticillata, raro folia normaliter opposita.

§ 1. *Eustellatae*. Semina magis minusve globosa, libera, erecta v. adscendentia. Stipulæ foliaceæ evolutæ.

1. *Rubia*, *L.* Flores pentameri. Drupa succulenta. Herbæ annuæ v. perennes, erectæ v. scandentes.
2. *Galium*, *L.* Flores 4-meri. Drupa ut plurimum didyma, v. globosa, exsucca. Herbæ perennes v. annuæ, erectæ v. prostratæ.

Trib. II. *COFFEACEÆ*. Drupa magis minusve carnosæ v. succulentæ, rarius bacca, 1-pluri-locularis, ovulis 1 v. pluribus in singulo loculo. Semina haud alata v. appendiculata. Stipulæ interpetiolares veræ connatæ v. liberæ.

Subtrib. 1. *Coffeæ*. Ovarium 2-loculare, ovulis in loculis solitariis erectis v. medio affixis. Bacca e pyrenis 2 v. pluribus (raro abortu solitariis) tenuicrustaceis v. membranaceis monospermis composita.

§ Ovarium 2-loculare.

\* Corolla valvata. Albumen vulgo carnosum (*Psychotriæ*).

3. *Cephaelis* *L.* (incl. *Geophila*, Don). Corolla infundibuliformis tubo longo. Calyx 4- v. 5-dentatus v. lobatus. Flores capitati v. solitarii, axillares. Suffrutices v. herbæ perennes repentes.
4. *Hydnophytum*, *Jack.* Calycis limbus integer. Corollæ tubus brevis. Flores glomerati sessiles. Frutices epiphyti truncis tuberosis.
5. *Psychotria*, *L.* Corollæ tubus brevis, fauce barbata. Pyrenæ facie interna planæ et integræ. Flores cymosi v. cymosopaniculati. Frutices, raro suffrutices, raro scandentes.
6. *Ohasalia*, *Comm.* Corollæ tubus elongatus, fauce nudus. Pyrenæ facie interna secus placentam centram excavatæ. Frutices v. suffrutices; inflorescentia precedentis.

25. *Adenosacme*, Wall. Calyx 5-4-fidus. Corollæ faux nuda. Cymæ v. corymbi terminales v. subterminales, raro laterales.

26. *Urophyllum*, Jack. Calyx integer v. minute denticulatus. Corollæ faux barbata. Florum glomeruli v. cymæ axillares.

Trib. III. CINCHONACEÆ. Capsula exsucca, vario modo dehiscens v. rarisime indehiscens [vel si carnescens uti in *Sarcocephalo*, v. baccata (uti in *Morindeis*) semina semper alata v. appendiculata]. Ovarium 2- $\infty$ -loculare, loculis 1- $\infty$ -ovulatis. Semina alata, appendiculata, v. nuda. Stipulæ interpetiolares veræ.

Subtrib. 1. Ovarii loculi 2-4,  $\infty$ -v. (in *Cephalantho*? 1-) ovulati. Capsulæ vario modo dehiscentes. Semina plus minusve alata v. appendiculata.

§ 1. *Morindeæ*. Flores denso capitati. Ovarium 2-v.  $\infty$ -loculare, ovula solitaria et erecta v. numerosa et pendula. Baccæ v. drupæ baccatæ ut plurimum in receptaculo incrassato congregatæ et sæpius in syncarpium connatæ.

\* Ovula et semina in loculis numerosa, imbricato-pendula.

27. *Psilobium*, Jack. Baccæ elongatæ, subfolliculares, discretæ. Arbores v. frutices.

\*\* Ovula et semina in loculis solitaria, erecta.

28. *Morinda*, L. Baccæ sæpius in syncarpium connatæ. Arbores v. frutices, nonnunquam scandentes.

§ 2. *Naucleæ*. Flores in receptaculo incrassato capitati. Capsulæ a basi v. alius modi dehiscentes, siccæ, v. raro (in *Cephalantho*) baccatæ.

\* Capsulæ baccatæ, a basi dehiscentes.

29. *Sarcocephalus*, Afz. Capsulæ baccatæ 2-loculares, v. loculis 2 superpositis sterilibus auctæ, in syncarpium connatæ.

\*\* Capsulæ siccæ, loculicide- v. septicide in coccos 2- $\infty$ -v. raro monospermos dehiscentes.

O. Capsulæ in coccos 2- $\infty$ -spermos dehiscentes. Corollæ et calycis lobi dentibus interjectis carentes.

30. *Nauclea*, L. Flores bracteolis carentes. Arbores, raro frutices erecti.

31. *Stephegyne*, Korth. Flores bracteolis angulari-clavatis circumdati. Arbores.

OO. Capsulæ 2-4-loculares, loculis 1-ovulatis. Calycis et corollæ lobi in sinibus denticulati.

32. *Cephalanthus*, *L.* Flores 4-meri, bracteolis lineari-clavatis circumdati. Frutices v. arbusculæ.  
 ○○○. Capsulæ 2-loculares, rimis longitudinalibus dehiscentes. Scandentes. •
33. *Uncaria*, *Schreb.* Flores sessiles v. pedicellati, bracteolis destituti.  
 § 3. *Eucinchonæ*. Flores paniculati v. corymbosi, haud capitati. Capsulæ 2-loculares, septicide in valvas 2 v. apice 4-valvatim dehiscentes.  
 \* Capsulæ in valvas 2 lignosas septicide dehiscentes.
34. *Hymenodyction*, *Wall.* Arbores; inflorescentiæ foliis floralibus discoloribus gaudentes.  
 \* \* Capsulæ apice 4-valvatim dehiscentes. •
35. *Hymenopogon*, *Wall.* Frutices epiphytici; inflorescentia foliis floralibus discoloribus gaudentes.
- Subtrib. 2. SPERMACOCEÆ. Ovarii loculi 2-4, loculis 1-v. pluri-ovulatis. Capsulæ vario modo dehiscentes v. in coccos 2-4 separantes, raro indehiscentes. Semina nunquam alata v. appendiculata, numerosa v. solitaria.  
 § 1. *Hedyotideæ*. Ovula et semina in loculis plura v. numerosa, lateraliter affixa.  
 ○ Stipulæ connatæ v. liberæ, haud vaginantes v. setaceo-fimbriatæ. (*Rondeletieæ*).  
 \* Stigma 2-fidum v. -lobum. Corolla imbricata v. tortuosa. Antherarum loculi mutici.
36. *Wendlandia*, *Bartl.* Corolla tubulosa, tortuosa. Capsulæ apice bivalvatim dehiscentes. Arbores v. frutices. (Hic *Greenia*, *WA.*)
37. *Spiradiclis*, *Bl.* Corollæ tubus brevis. Capsulæ in valvas 2 iterato bivalvatim separatas marginibus inflexas dehiscentes. Herbæ annuæ, erectæ.
38. *Ophiorrhiza*, *L.* Corolla infundibuliformis v. tubulosa. Placenta erecta, libera. Capsulæ compressæ, divaricato-2-lobæ, apice rima loculide-dehiscentes. Herbæ annuæ v. perennes.  
 \* \* Stigma capitatum. Corolla valvata. Antherarum loculi in appendicem sterilem setaceum prolongati.
39. *Argostema*, *Wall.* Corolla subrotata, limbo 3-7-fido. Capsulæ apice valvis 4 dehiscentes. Herbæ Melastomacearum habitu.  
 ○○ Stipulæ petiolis adnatæ et basi vaginantes, setaceo-ciliatæ. (*Euhedyotideæ*.)
40. *Dentella*, *Forst.* Flores 5-meri, petala 2- v. 3-dentata. Capsulæ vix dehiscentes.

41. *Hedyotis*, L. Flores 4-meri; petala integra. Capsulæ loculicide v. septicide dehiscentes, v. in cocos 2 v. 4 pleiospermos separantes.
- Subg. 1. *Oldenlandia*. Capsulæ magis minusve hemisphericæ et obsolete 2-lobæ, loculicide dehiscentes.
- Subg. 2. *Dimetia*. Capsulæ apice rima hiantè brevè septicide dehiscentes, magis minusve truncato-hemisphericæ et obsolete 2-lobæ.
- Subg. 3. *Metabolos*. Capsulæ septicide dehiscentes v. subdehiscentes, hemisphericæ, apice magis minusve truncatæ, sæpius obsolete 2-lobæ.
- Subg. 4. *Scleromitron* (Allœomorphia, Thw.). Capsulæ in cocos 2, v. eorum divisione, 4 indehiscentes pleiospermos separantes, calycis lobis convergentibus coronatæ. Calyx magis minusve ovoideus v. obovatus. An revera genus proprium? Spermacocis characteribus gaudens sed ovulis et seminibus plurimis discrepans et inter Hedyotidem et Spermacocem quasi intermedium.
- § 2. *Euspermacocæ*. Ovula et semina in loculis erecta et solitaria. Capsulæ dehiscentes, v. in cocos separantes, v. raro indehiscentes.
42. *Spermacoce*, L. (incl. *Hydrophylax*, L. f. ?) Ovula medio s. sub medio loculorum affixa. Capsulæ ab apice septicide dehiscentes. Herbæ annuæ v. perennes.
43. *Knoxia*, L. Ovula apice v. sub apice loculorum affixa. Capsulæ a basi in cocos 2 caducos separantes, axim persistentem setaceum relinquentes. Herbæ annuæ v. perennes.
- § 3. *Pæderiæ*. Ovula et semina compressa in loculis pendula et solitaria. Capsulæ drupæformes, crustacæ, v. pergaminacæ, vix dehiscentes, cocos 2 tenui-membranaceos alatim expansos includentes. An potius inter *Coffeaceas* recipiendæ?
44. *Pæderia*, L. Corolla valvata. Folia opposita v. 3-4-na verticillata. Volubiles.

### COMBRETACEÆ.

#### 155. *TERMINALIA TOMENTELLA*, nov. sp.

Arbor magna, novellis adpresse cupreo-pubescentibus; folia 5-8 poll. longa, petiolo 8-12 lin. longo apice biglanduloso suffulta, basi inæquali decurrentia, ovata ad ovato-oblonga, acuta v. subacuta, coriacea, integra, junio-



ra subtus densæ, adulta parce cupreo-pubescentia v. omnino glabrescentia; flores parvi, sessiles, spicati, paniculam parvam ferrugineo- v. fulvo-tomentellam componentes; bracteolæ subulatæ, floribus longiores, deciduæ; calycis lobi triangulares, acuti, extus glabri, intus unacum glandulis hypogynis albo-lanuginosi; tubus ovatus, teres, glaberrimus; drupæ poll. vix longæ, ovatæ, obsolete 5-gonæ v. teretes, lutescentes, læves.—*Pegu, Martaban, Tenasserim. T. Chebulæ*, Retz., quam maxime affinis, calycis tubo lævissimo, indumento copiosiore et fructibus minoribus distat.

### BEGONIACEÆ.

#### 156. BEGONIA NIVEA, Parish MS.

Herbula succulenta radice tuberosa?, subglabra; folia radicalia 1 v. 2, obovato-oblonga, apice irregulariter truncato-angulata, basi in petiolum brevissimum crassum glabrum constricta, dentata et parce setuloso-ciliata, palmatim 5-nervia, 2-3 poll. longa, membranacea, supra setulis brevibus adpersa, subtus glabra; scapus radicalis, glaberrimus, folio duplo longior, apice bibracteato, flores 2 v. 3 majusculos candidos gerens; bracteæ 2 ovales v. ovali-oblongæ, acutæ, foliaceæ, c. 2-3 lin. longæ; flores feminei pedicellis brevioribus, masculi longioribus 1-1½ poll. longis glabris, instructi; sepala et petala obovato-oblonga ad lato-ovalia, c. 5 lin. longa, in femineis aliquanto breviora; stamina monadelphæ; antheræ obovato-oblongæ, obtusæ; styli 2, basi v. ad medium fere connati, uno 3- altero 2-bifido et glandulis stigmaticis stipitatis dense obducti; capsulæ immaturæ glabræ, oblongo-ovatæ, inæquali-3-alatæ, alis triangularibus et acute productis, medio majore.—*Tenasserim* (Revd. Parish).

#### 157. BEGONIA SUPERFOLIATA, Parish MS.

Herbula erecta, succulenta, radice tuberosa? scapigera; folia radicalia solitaria, petiolo 1½ usque ad 3½ poll. longo subvelutino suffulta, ovata ad ovato-oblonga, vix inæqualia, basi rotundata leviter peltata, obtusiuscule acuminata, grosse crenato-dentata, 2-3 poll. longa, membranacea, utrinque pulcherrime concavo-punctata (in vivo probabiliter papilloso-holosericæ), subtus ut plurimum subpurpurascens; scapus radicalis v. subradicalis, glaber, folio brevior, dichotomo-cymosus, pauciflorus; bracteæ virides, elliptico-lanceolatæ, acutæ, c. lin. longæ, papillose; flores parvi, rosci, pedicellis capillaribus glabris; sepala ovalia, obtusa, 2-3 lin. longa, extus conspicue venosa; stamina monadelphæ; antheræ breves, obovatæ; styli 3, alte connati, 2-fidi; capsulæ c. 3 lin. longæ, obovatæ, glabræ, 3-loculares, 3-alatæ, alis capsulâ ipsâ latioribus semi-obcordatis; placentæ 2-fidæ.—*Tenasserim* (Revd. Parish).

#### 158. BEGONIA VELUTINA, Parish MS.

Herbula simplex, scapifera, unifoliata, radice parva tuberosa; folium petiolo 1-3 poll. longo nonnunquam parce pubescente suffultum, cordato-ova-

tum ad cordato-rotundatum, palmatim 7-nerve, obtusum, v. breve et obtusiuscule acuminatum, irregulariter et breve lobatum, dentatum et ciliatum, c. 1-2 poll. longum et latum, membranaceum, supra papillosum et pilis minutis brevibus adpersum, subtus secus nervos adpresso pubescens; scapi radicales, folio vulgo sublongiores, glabri, pauciflori; bractea minutæ, lineares; flores majusculi, rosei? sepala 4 lin. fere longa, lato-ovalia, obtusa; petala minuta, lineari-lanceolata, acuminata; perianthii feminei lobi dimidio breviores; stamina numerosa, libera; antheræ obovatæ, breves, truncatæ; stigmata 3, libera, apice dilatato in lobos stigmatiferos 2 tortuosos divergentia; capsulæ immaturæ obovatæ, glabræ, 3-loculares, anguste 3-alatæ alis apice truncatis; placentæ bifidæ.—*Tenasserim* (Revd. Parish, Dr. Stoliczka).

*Begoniæ* species Burmanicæ sequenti modo distingui possunt:—

Subg. I. *CASPAREA*. DC. Capsulæ carnosæ et bacciformes, secus angulos v. alas crassas latas dehiscences.

Herba robusta glabriuscula ramosa; styli 4; capsulæ 4-loculares et 4-angulares, angulis in appendices cornutos productis, ..... *B. Roxburghii*.

Subg. II. *Begonia*, DC. Capsulæ siccæ, lineâ semicirculari secus lateres alarum v. angulorum dehiscences.

\* Styli 2, bifidi v. vario modo dilatati v. ramosi; capsulæ 2-loculares; placentæ bifidæ.

† Stamina libera. Capsulæ inæquali-3-alatæ, alis 2 anterioribus sæpius ad costam membranaceam reductis.

Herba robusta, ramosa, molliter paleaceo-pilosa; folia longipetiolata, lobata, ..... *B. laciniata*.

Uti prior, sed gracilior et glaberrima; capsula glabra, ... *B. megaptera*,

Herba robusta subsimplex, molliter paleaceo-pilosa; folia longipetiolata, non lobata; capsula paleaceo-pilosa, ..... *B. barbata*.\*

†† Stamina monadelphæ. Maris perianthium 5-lobatum, femineum 5-6-lobatum; capsulæ inæquali-3-alatæ.

|| Folia et inflorescentia radicalis, illa in petiolum 2-3 lin. longum contracta, ciliata, supra hispida; flores poll. fere in diametro, candidi, ... *B. nivea*.

||| Inflorescentia axillaris v. e basi folii orta, v. prolifica e gemma axillari.

O Non prolifica. Folia alterna v. verticillata, raro numero ad solitarium reducta. Flores parvi, albi.

Glabra; folia alterna, petioli 1-2 lin. longi, ..... *B. procrdifolia*.

Glabra; folia verticillata, longius petiolata, ..... *B. verticillata*.

Caules petiolique pubescentes; inflorescentia glabra; folia alterna, longipetiolata, supra sparse hirtula, ..... *B. Martabanica*.

\* Planta Burmanica, floribus roseis gaudens, ab Assamica paullo differt capsulis majoribus crassioribus magis pilosis.

OO. Prolifica, folio solitario radicali v. foliis paucis alternatis. Flores parvi, albi.

Magis minusve stellato-velutina; inflorescentia glabra; folia alterna v. raro solitaria, ..... *B. sinuata*.

Glabra; folium solitarium, pedunculis 2 v. pluribus ex ipsius basi ortis, ..... *B. prolifera*.

Caules &c., et inflorescentia conspicue bracteata, paleaceo-pilosa, sæpius pilis glandulosis intermixtis, ..... *B. paleacea*.

† † † Stamina monadelphæ; perianthium utriusque sexus 2-sepalum, apetalum.

Herba tenerrima; folia alterna, supra minute et sparse pilosa; flores parvi, ..... *B. flaccidissima*.

\* \* Styli 3, liberi v. connati; capsulæ 3-loculares et 3-alatæ.

† Placentæ integræ.

Glabra; inflorescentia radicalis v. subradicalis; folia radicalia profunde lobata; perianthium 2-sepalum, apetalum, ..... *B. Brandisiana*.

† † Placentæ bifidæ.

O Herbæ caulescentes foliis caulinis alternatis.

Partes omnes et inflorescentia glabra; capsulæ 3 lin. longæ, alis apice truncatis; stamina monadelphæ, ..... *B. parvuliflora*.

Folia supra sparse setulosa et nitida, cæteris præcedenti assimilis, at capsulæ  $\frac{1}{2}$  poll. longæ; stamina libera, antheræ mucronulatæ; styli liberi, ..... *B. modestiflora*.

Uti præcedens, sed folia opaca et pilosiora; stamina monadelphæ, antheræ connectivo truncato lato terminatæ; styli ad medium connati, *B. scutata*.

Folia minute et sparse pilosula; inflorescentia glanduloso-puberula; stamina monadelphæ, capsulæ alio semisagittatæ basi in lobos obtusos productæ, ..... *B. surculigera*.

OO. Herbæ scapigeræ, foliis et inflorescentiis radicalibus et vulgo solitariis.

Folia longissime petiolata, basi peltata, papilloso-punctata et glabra, ..... *B. subperfoliata*.

Folia longissime petiolata, cordata, nec peltata, supra papillosa et minute pilosula; stamina libera, ..... *B. velutina*.

### ERICACEÆ.

159. VACCINIUM VERTICILLATUM, Kurz, non Wight. (*Agapetes verticillata*, D. Don, Gen. Syst. III. 862.; DC. Prod. VII. 554).

Frutex epiphyticus, 2-3 pedalis, glaber; folia obovato-lanceolata ad subcuneato-lanceolata, petiolo brevissimo crassissimo, v. subsessilia, basi attenuata rotundata v. obtusa, 2 $\frac{1}{2}$ -3 $\frac{1}{2}$  poll. longa, obtusiuscula v. breviter acuminata, coriacea, integra v. apicem versus obsolete et remote serrata, glabra, nervis

secur marginem anastomozantibus ; flores speciosi, coccinei v. miniati, tubulosi,  $\frac{3}{4}$  ad  $1\frac{1}{4}$  poll. longi, pedicellis subpollicaribus, glanduloso-hirsutis suffulti, umbellam v. potius racemum abbreviatum pauciflorum axillarem formantes v. solitarii v. fasciculati ; calyx 5-dentatus, glanduloso-hirsutus, dentibus lanceolatis acutis lin. circiter longis ; corolla glabra, 5-gona, lobis linearilanceolatis obtusis ; filamenta 2 lin. fere longa ; antheræ c. 3 lin. longæ, granulato-tuberculatæ, in tubos rigidos plus quam poll. longos productæ ; stigma parvum, truncatum v. sub-5-lobo-peltatum ; baccæ glanduloso-hirsutæ, pedunculi apice subcyathiformi-incrassato insidentes, calycis limbo coronatæ.

Var. *a. genuinum*, corolla  $\frac{3}{4}$  poll. tantum longa ; flores in racemos umbelliformes brevipedunculatos dispositi. (*Thibaudia obliqua*, Griff., Icon. Dicot. t. 515).

Var. *β. elegans*, corolla præcedentis sed flores solitarii v. 2-3-ni fasciculati axillares ; folia vulgo latiora.—*Pegu*.

? Var *γ. grandiflorum*, corolla duplo longior, flores in racemos umbelliformes breve pedunculatos v. sessiles collecti, rarius solitarii.—*Martaban, Tenasserim*.

N. B.—*V. verticillatum*, Wight, Ic. t. 1181. ad *V. setigerum* (*Agapetes setigera*, Don) pertinet.

160. VACCINIUM VARIEGATUM (*Agapetes variegata*, Don, Gen. Syst. III. 862 ; *Ceratostemma variegatum*, Roxb. Fl. Ind. II. 413 ; Griff. Icon. Dicot. t. 502 ; *Thibaudia variegata*, Royle, Ill. Him. Pl. t. 79, f. 1.).

Frutex epiphyticus, 2-3 pedalis, glaber ; folia lanceolata ad obovato-lanceolata, acuta v. breviter acuminata, petiolis brevissimis crassis, v. subsessilia, basi acuta v. obtusa, 2-3 poll. longa, coriacea, apicem versus obsolete repando-serrata, glabra, nervis secur marginem anastomozantibus ; flores coccinei, pedicellis gracilibus glabris sursum cyathiformi-incrassatis suffulti, in racemos umbelliformes axillares v. supra foliorum delapsorum cicatricibus ortos pedunculatos glabros dispositi, v. rarius fasciculati v. solitarii ; corolla glabra, poll. fere longa, tubulosa, lobis obtusiusculis ; calyx glaber, 5-fidus, lobis oblongis lanceolatis c. 2 lin. longis acutis sæpius obsolete costatis et penninerviis ; antheræ granulato-tuberculatæ, filamentis brevissimis suffultæ, in tubos  $\frac{3}{4}$ - $\frac{3}{2}$  poll. longos productæ ; stigma truncatum ; baccæ glabræ, rubræ, calycis limbo coronatæ.

Variat: *a. macranthum* (*Ceratostemma variegatum*, Roxb. et Wight ; *Thibaudia macrantha*, Hook., Bot. Mag. t. 4566.) flores c. 2 poll. longi v. longiores, variegati.—*Tenasserim*.

Var. *β. parviflora* (*Thibaudia variegata*, Royle) flores dimidio minores, miniati v. coccinei.—*Martaban*.

161. *VACCINIUM MINIATUM* (*Ceratostema miniatum*, Griff. Icon. Dicot. t. 504.)

Frutex epiphyticus glaber; folia oblongo-lanceolata ad oblonga, acuta v. acuminata, petiolis brevissimis crassis, v. subsessilia, basi subinæquali rotundata, 4-5 poll. longa, acuta v. acuminata, repando-serrulata, coriacea, glabra, subtus nervis numerosis et prominentibus, secus margines evanescentibus, laxè et prominenter reticulata; flores coccinei, racemos breves umbelliformes glabros axillares v. laterales efficientes, raro pauci et fasciculati; calyx glaber; corolla glabra, 5-gona, c.  $\frac{3}{4}$  poll. longa, lobis brevibus linearibus acutis; filamenta brevissima, antheræ tubo inclusæ, granulato-tuberculatæ, tubis strictis nudis paullulo breviores; baccæ desunt.—*Ava?* (Griff.)

162. *VACCINIUM CAMPANULATUM*, nov. sp.

Frutex epiphyticus, glaber, ramulis subangulatis; folia obovato-oblonga ad lanceolata, obtusa v. obtusiuscule acuminata cum mucrone, petiolis brevissimis et crassis v. subsessilia, 2-3 poll. longa, basi acuta v. obtusa, integra v. subintegra, marginibus recurvis, coriacea, glabra, nervis tenuibus secus marginem liberis, laxè reticulata; flores coccinei, sæpius variegati, pedicellis gracilibus glabris suffulti, in racemum gracilem sed brevem glabrum sæpius e ramis ortum dispositi; calyx glaber, limbo cyathiformi argute sinuato-5-dentato; corolla glabra, c.  $\frac{1}{2}$  poll. longa, v. paullo longior, 5-angularis, campanulata, lobis longis lanceolatis acuminatis reflexis; filamenta brevissima; antheræ granulato-tuberculatæ, loculis in tubos strictos anthera ipsa sublongiores dorso basi refracto-setosos terminatis.—*Martaban.*

163. *VACCINIUM MACROSTEMON*, nov. sp.

Frutex epiphyticus, 2-4 pedalis, glaber; folia cum basi crassa rotundata v. obtusa subsessilia, obovato-lanceolata ad lanceolata, acuminata, 3-5 poll. longa, marginibus integris recurva, coriacea, glabra, nervis tenuibus marginem versus liberis, tenuiter et laxè reticulata; flores coccinei, pedicellis gracilibus glabris in racemos magis minusve elongatos glabros subulato-bracteatos solitarie v. geminatim supra foliorum delapsorum axillis ortos dispositi; calyx glaber, limbo cyathiformi, lobis longe subulatis; corolla c.  $1\frac{1}{2}$  poll. longa, glabra, subcurvo-tubulosa, lobis lineari-lanceolatis reflexis; filamenta glabra, gracilia, c.  $\frac{1}{2}$  poll. longa v. longiora; antheræ breviusculæ, connatæ, læves, loculis in tubos strictos anthera longiores productis; baccæ fusiformi-ovoidæ, apice angustatæ et calycis limbo cyathiformi coronatæ.—*Martaban.*

164. *VACCINIUM PUMILUM*, nov. sp.

Frutex ramosissimus, parvus, epiphyticus, novellis pubescentibus; folia oblonga ad lanceolato-oblonga, petiolo brevissimo puberulo, basi acuta, obtusiuscula, crenulata, crasse coriacea, c. poll. longa v. breviora, subtus (in vivo albid) pallida, nervis obsoletis; flores parvi, pedicellis brevissimis pube-

ruis, in racemos (2 v. 1) terminales pubescentes bracteatos disgesti; bractæ deciduæ, albæ, membranaceæ, foliaceæ, ovatæ, puberulæ et ciliatæ; calyx pubescens, dentibus oblongo-lanceolatis, acutis, ciliatis; corolla c. 2 lin. longa, oblongo-urceolata, lobis brevissimis reflexis, 5-gona, extus glabra, intus in primis ad faucem dense villosa, rosea; filamenta brevina, filiformia, apice pilosa et barbata; antheræ glabræ, loculis in tubum brevem lanceolato-subulatum basi bisetosum desinentibus; baccæ parvæ, purpureæ, glabræ, calycis limbo coronatæ.—*Martaban.*

165 VACCINIUM EXARISTATUM, nov. sp.

Frutex magnus, sæpius in arbusculam exerescens, novellis pubescentibus; folia oblongo-lanceolata ad oblongo-ovata, petiolis puberulis brevibus suffulta, basi acuta v. obtusiuscula,  $1\frac{1}{2}$ - $2\frac{1}{2}$  poll. longa, acuta v. breve acuminata, subtus dum juvenilia paræ pubescentia, glabrescentia, chartacea, serrulata, penninervia et inconspicue reticulata; flores albi, pedicellis  $1-1\frac{1}{2}$  lin. longis puberulis, racemum secundum gracilem puberulum axillarem formantes; bractæ coccinæ, deciduæ; calyx puberulus v. subglaber, lobis triangulari-acutis, corolla  $2-2\frac{1}{2}$  lin. longa, glabra, urceolata, lobis reflexis brevibus; filamenta pilosa, basi dilatata; antheræ tubis brevibus et setis destitutis terminatæ; baccæ globosæ, glabræ, rubræ, calycis limbo coronatæ.—*Martaban.*

*Var. a. semipubescentis*, calyx glaber v. subglaber.

*Var. β. pubescens*, calyx pubescens.

PRIMULACEÆ.

166. LYSIMACHIA LINEARIFOLIA, Griff., MS. in Hb. Griff. 3532.

Herba annua, erecta, stricta, glabra, caulibus teretibus v. subteretibus simplicibus ped. circiter altis; folia alterna, linearia ad lineari-lanceolata, utrinque acuminata,  $1-1\frac{1}{2}$  poll. longa, petiolo gracillimo sed brevi suffulta, integra, membranacea, glabra; flores parvi, solitarii v. geminati, axillares, longe pedunculati; calycis segmenta lineari-subulata, plus quam lineam longa; pedunculi fructigeri graciles, c.  $1\frac{1}{2}$  poll. longi.—*Ava?* (Griff.). *L. pedunculari*, Wall., affinis. *Lysimachiae* sp. Griff. Not. Dicot. 299. t. 484, speciem mihi distinctam *L. Lobelioidi* affinem nomine *L. Griffithianæ* saluto.

MYRSINEACEÆ.

167. ARDISIA HELFERIANA, nov. sp.

Frutex? ferrugineo-tomentosus; folia obovato-oblonga ad oblonga, petiolis 3-4 lin. longis crassis dense ferrugineo-pubescentibus, breve acuminata, integra v. obsolete repando-dentata, 3-5 poll. longa, membranacea, utrinque ferrugineo-pubescentia, nervis lateralibus tenuibus et curvis; flores parviusculi, pedicellis  $\frac{1}{2}$ -1 poll. fere longis ferrugineo-pilosis sustenti, racemum subumbelliformem ferrugineo-pubescentem pedunculo nudo 3-4 pollicari gracili

axillari suffulto formantes ; calyx ferrugineo-pilosus, lobis oblongo-lanceolatis, acutis, lineam circiter longis ; corolla glabra, lobis c.  $2\frac{1}{2}$  lin. longis, oblongis, acutis ; drupæ desunt.—*Tenasserim* (Helf. 3589).

168. *ARDISTIA SERRULATA*, nov. sp.

Frutex ? novellis tomento minuto ferrugineo obtectis ; folia lanceolata v. elliptico-lanceolata, basi in petiolum 5-8 lin. longum attenuata, breve acuminata v. acuta, repando-serrulata, basin versus integra, 4-6 poll. longa, tenuia et membranacea, glabra, parce punctata, nervis crebris approximatis, subparallelo-divergentibus et inconspicuis ; flores parvi, pedicellis gracilibus inæquali-longis ferrugineo-puberulis suffulti, densiuscule thyrsoides racemosi et paniculam terminalem v. ex axillis foliorum superiorum ortam amplam ferrugineo-puberulam bracteata formantes ; bracteæ foliaceæ, linearilanceolatae, 3-6 lin. longæ, subtus ferrugineo-lepidosæ ; bracteolæ minores, lineares ; calyx ferrugineo-puberulus, lobis linearibus acutis c.  $\frac{1}{2}$  lin. longis ; corolla subrotata, lobis ovatis acutis c. 2 lin. longis ; drupæ desunt.—*Ava* ? (Griff. 3562). Inter *A. neriifoliam* et *A. floribundam*, Wall., intermedia.

169. *ARDISTIA RIGIDA*, nov. sp.

Frutex ? novellis probabiliter indistincte ferrugineo-lepidotis ; folia oblongo-lanceolata, in petiolum 4-6 lin. longum crassum attenuata, breve et obtusiuscule acuminata, pergamacea, integra, 6-9 poll. longa, glabra, punctata, nervis subtus prominentibus et subparallelis ; flores...parvi, pedicellis  $\frac{1}{2}$ - $\frac{3}{4}$  lin. longis crassis minute ferrugineo-puberulis nutantibus suffulti, paniculam terminalem compositam rigidam robustam ferrugineo-puberulam efficientes ; calyx minute et indistincte puberulus, lobis ovatis acutiusculis, vix  $\frac{1}{2}$  lin. longis, ciliolatis ; corolla... ; drupæ immaturæ globosæ, glabræ.—*Tenasserim* or *Andamans*. (Helf. 3563).

170. *MUSA MUSCOSA*, nov. sp.

Frutex ramis teretibus lævibus nitidisque, ramulis... ; folia oblonga ad obovato-oblonga, basi acuta v. acuminata, petiolis  $\frac{1}{2}$ -1 poll. longis validis parce puberulis, breve acuminata, grosse sinuato-dentata, pergamacea, 5-7 poll. longa, glabra, costa subtus parce puberula, nervis secus margines in denticula callosa obtusa excurrentibus ; flores minuti, 5-meri, pedicellis brevissimis pubescentibus suffulti, breve racemosi, in paniculam axillarem quasi muscosam petiolis 2-3-pl. longiorem ferrugineo-pubescentem disgesti ; bracteæ lin. circiter longæ, pedicellis longiores, ferrugineo-hirsutulae, lineari-acuminatae ; bracteolæ ? ; calyx ferrugineo-hirsutus, lin. fere longus, lobis ovato-lanceolatis acutis ; corolla tubuloso-campanulata, glabra, calyce duplo longior, lobis brevibus rotundatis ; ovarium sub-inferior ; stylus calycis lobos longitudine haud attingens.—*Burma* (Griff. 3556). Ex affinitate *M. mollissi*.

*mæ.* *M. permollis*, species olim a me in hocce diario descripta (cf. 1871, p. 66) nunc formam extremam latifoliam *M. mollissimæ*, Wall., habeo. Formas intermedias inter ambas species nuper in Burmania haud raro observavi.

### SAPOTACEÆ.

#### 171. ISONANDRA CALOPHYLLA, Kurz, in Journ. As. Soc. Beng. 1871. 69.

Arbor mediocris, novellis dense adpresse ferrugineo-pubescentibus; folia elliptica v. elliptico-oblonga, petiolis 4-5 lin. longis cupreo-puberulis glabrescentibus, breve acuminata, integra, marginibus recurvulis, 4-7 poll. longa, chartacea, minute ferrugineo- v. cupreo-sericea glabrescentia, supra nitida, nervis lateralibus prominentibus validis, transverse tenui-venosa; flores nondum reperti; fructus pruni magnitudinis, pedunculo nutante, 1-1½ pollicari subglabro axillari sustenti, elliptico-ovati, apiculati, dense ferrugineo-puberuli, 1-2-spermi, basi calyce persistente 6-partito lobis ovatis supportati; semina semi-oblonga, 1½ poll. fere longa, lucida, brunnea.—*Andamans.*

### EBENACEÆ.

#### 172. GUNTSANTHIUS MOLLIS, nov. sp.

Arbuscula ramis novellisque brunneo-pubescentibus; folia petiolo brevissimo (c. 1 lin.) suffulta, anguste oblonga v. oblongo-lanceolata et sæpius basin obtusam versus subangustata, obtusiuscule acuminata, 3-4 poll. longa, chartacea, supra secus costam et subtus omnino molliter pubescentia; flores ochracei, extus dense pubescentes, pedicellis 4-6 lin. longis pilosis suffulti, racemos breviusculos pilosos efficientes; calycis lobi lineari-lanceolati, c. 3 lin. longi, tubo multo breviores; corollæ lobi tubo calycino paullulo longiores, feminei fructusque adhuc ignoti. *Diospyros mollis*, Kurz *MS. olim.—Martaban.*

#### 173. DIOSPYROS SAPOTOIDES, nov. sp.

Arbor mediocris, novellis parce ferrugineo-pubescentibus mox glabrescentibus; folia elliptico-oblonga ad elliptica, basi obtusa, petiolo vix semipollicari glabrescente crasso suffulta, 6-8 poll. longa, breve et obtusiusculo acuminata, integra, coriacea, reticulatione laxissima subtili et immersa percursa; flores hermaphrodito-feminei 4-meri, flavescenti-albi, iis *D. sapotæ* assimiles, subsessiles, glomerati, pedunculo crassissimo axillari brevissimo; calyx extus ferrugineo-pubescentis, lobi ovato-lanceolati marginibus reflexi et basi auriculato-complicati, 3 lin. fere longi, acuminati; corollæ tubus urceolatus, calyce sub-duplo longior, extus ferrugineo-pubescentis, lobis obovatis tubi fere longitudinis; stamina c. 12, tubo basi inserta, glabra, inæqualia; antheræ ovato-lanceolatae, acuminatae; filamenta filiformia, glabra; ovarium ovatum, glaberrimum, stylo moderate longo 4-fido; flores masculi fructusque desunt.—*Pegu.—D. undulata* arcte affinis, sed ovario glaberrimo discrepat.



*STYRACACEÆ.*174. *SYMPLOCOS PEDICELLATA*, nov. sp.

Arbor mediocris subgracilis, novellis sparse adpresse sericeis; folia elliptico-lanceolata ad lanceolata, in petiolum 4—5 lin. longum gracilem glabrum attenuata, subcaudato-acuminata, obsolete crenato-serrulata, 4-5 poll. longa, tenuiter pergamacea, glabra, opaca, nervis et reticulatione laxa subtilibus; flores ignoti; racemi graciles compositi paniculam depauperatam subsessilem minute adpresse pubescentem axillarem v. supra foliorum delapsorum cicatricibus ortam efficientes; bracteæ casæ; bracteolæ  $\frac{1}{2}$  lin. vix longæ, minutæ, ovato-acutæ, glabræ, deciduæ; pedicelli vulgo 2 lin. longi, minute adpresse pubescentes; baccae immaturæ ovoideæ, 3-4 lin. longæ, læves, teretes, calycis limbo coronatæ, putamen pergamaceum monospermum includentes; calycis lobi sub fructu lato-ovati, obtusi, c.  $\frac{1}{2}$  lin. longi, glabri. *Martaban.*—*S. lucida*, Wall., affinis, pedicellis distinguitur.

175. *SYMPLOCOS LEIOSTACHYA*, nov. sp.

Arbor v. frutex subglaber; folia elliptico-lanceolata ad lanceolata, petiolis 3-4 lin. longis sparse hirtis suffulta, acuminata, crenato-serrulata, 2-4 poll. longa, subchartacea, supra lucida, subtus secus costam validam nervosque parce adpresse pubescentia, nervatione tenui et inconspicua percurra; flores parvi, pedicellis gracilibus 1-1 $\frac{1}{2}$  lin. longis glabris suffulti, racemos numerosos graciles simplices glabros ex apice ramorum orientes efficientes; bracteæ pedicelli basi insertæ, lin. circiter longæ, lanceolatae, acutæ, glaberrimæ; bracteolæ sub calyce 2, bracteis subconformes sed minutæ; calyx lævis, lobis ovatis obtusis, c.  $\frac{3}{4}$  lin. longis; corolla rotata, lobis ovato-oblongis, obtusis, c. 1 $\frac{1}{2}$  lin. longis; stamina numerosa, inæqualia, basi tubo brevissimo inserta; baccas nondum vidi.—*Tenasserim* (Helf-3656).

176. *SYMPLOCOS LEUCANTHA*, nov. sp.

Arbusecula glabra; folia oblongo ad elliptico-lanceolata, basi sub-inæqualia, petiolo 2-3 lin. longo inserta, breve et obtusiuscule acuminata, 3-4 poll. longa, crenulato-dentata, chartacea, glabra; flores albi, fragrantés, pedicellis brevissimis vix  $\frac{1}{2}$  lin. longis crassis caescenti-tomentosis suffulti; racemi breves, tomentosi, axillares, bracteis nonnullis ovatis extus pubescentibus caducis sustenti; calyx glaberrimus v. ejus lobi ovati obtusi extus pubescentes, ciliolati, c. 2 lin. longi; petala obovato-oblonga, calycis lobis duplo longiora; stamina glabra, inæqualia, 5-adelpha, phalangibus basi loborum insertis; ovarium stylusque longus parce pubescens; drupa non visa.—*Pegu.* Ex affinitate *S. cratægioidis*, Don.

*APOCYNÆÆ.*177. *TABERNÆMONTANA OPHIORRHIZOIDES*, nov. sp.

Frutex 2-4 ped. altus, glaber; folia obovato-oblonga ad lato-lanceolata in petiolum brevissimum (2-3 lin.) attenuata v. foliorum nonnulla subsessi-

lia, breve acuminata, 3-5-poll. longa, integra, membranacea, glabra, subtus pallida; flores pedicellis 1-1½ lin. longis suffulti, cymas 3, v. raro 2, v. plures breve pedunculatas, v. nonnunquam subsessiles, glabras paucifloras in ramulorum superiorum furcationibus sitas efformantes; calyx glaber, brevissimus, 5-fidus, segmentis lineam vix longis, lanceolatis, acutis; corollæ tubus subcrassus, c. ¼ lin. longus, apice inflatus, lobis tubo vix dimidio brevioribus; folliculi... —*Martaban*. *T. rostrata*, Wall., affinis videtur, a qua inter alia corolla duplo brevior differt.

178. *TABERNEMONTANA MEMBRANIFOLIA*, nov. sp.

Frutex 3-4 pedalis, glaber; folia lanceolata ad lato-lanceolata, in petiolum 3-5 lin. longum attenuata, 3-5 poll. longa, longe et graciliter acuminata, integra, membranacea, glabra, subconcolora; flores albi, pedicellis gracilibus 4-6 lin. longis glabris inserti; cymæ vulgo binæ, breve pedunculatæ, dichotomo-ramosæ, glabræ, laxæ, corymbiformes in ramulorum superiorum furcationibus sitæ; bractæ nullæ v. minutæ et deciduæ; calyx minutus, lobis lineari-subulatis, lineam vix longus; corollæ tubus gracilis ½ poll. longus, infra medio circa antheras leviter inflatus, lobi lineari-lanceolati, acuminati, tubo dimidio circiter breviores; folliculi desunt.—*Martaban*. *T. subcapitata*, Wall., affinis, sed calyce jam distincta.

*BIGNONIACEÆ.*

179. *SPATHODEA VELUTINA*, nov. sp.

Arbor, novellis fulvo-puberulis; folia impari-pinnata, 1-1½ ped. longa, petiolo glabro striato basin versus 1-2 foliolis diminutis stipuliformibus munita; foliola 4-juga cum impari longe petiolato, basi inæqualia, sessilia v. subsessilia, oblongo-lanceolata, acuminata, 4-6 poll. longa, serrulata, membranacea, glaberrima; inflorescentia deest; calyx spathaceus, recurvato-acuminatus, extus fulvescenti-velutinus, c. 1½ poll. longus; corolla c. 3 pollicaris, campanulato-infundibuliformis, glabra, tubo pollicari constricto, filamenta glabra, tubo supra constrictione inserta; capsula deest.—*Ava, Pegu* (Dr. Brandis).

180. *HETEROPHRAGMA SULFUREA*, nov. sp.

Arbor mediocris decidua, novellis tomento fugaceo canescenti-villoso obductis; folia impari-pinnata, 2-3 ped. longa, rachi petioloque fugaciter floccoso-tomentoso; foliola 4-5-juga cum impari longe petiolato, elliptica et ovato-elliptica ad ovalia, juniora obtusiuscule apiculata v. obtusiuscula et obsolete serrata, basi rotundata v. obtusa, sessilia v. brevissime petiolulata, 4-6 poll. longa v. longiora, chartacea, parce puberula, supra mox glabrescentia; flores sulfurei, conspicui, pedicellis cinerascenti- v. flavescenti-tomentosis 3-4 lin. longis suffulti, paniculas breves terminales dense tomentosas efficientes; calyx ½-¾ poll. longus v. brevior, campanulatus, usque ad medium fissus,

distincte 3- v. 2-lobatus v. dentatus, extus cinerascens-tomentosus, intus glaber; corolla infundibuliformis, glaberrima, tubo pollicari v. longiori, lobi patentes tubo plus quam duplo longiores, undulato-crispati; capsulae usque 2 pedales, iis *Spathodea stipulata* assimilēs, elongato-lineari-oblongae, compressiusculae, dense fumoso-tomentosae, septo brevi et valde reducto, medio septi instar dilatato; semina elongato-membranaceo-alata, c. 2 poll. longa.—*Prome, Pegu.*

181. *SPATHODEA IGNEA*, Kurz, in Journ. As. Soc. Beng. vol. XL, p. 77 descripta, potius generis novi typum praebet, calyce tantum usque ad medium fissō circumscisse deciduo spathaceo, filamentis usque ad medium corollae adnatis, antherarum loculis parallelis, nec non foliis decompositis a *Spathodea* distingui potest et sub nomine *Mayodendri* (in honorem viri nobilissimi Mayo, proregis infausti Indiae orientalis, dictum) in narratione mea officiali de sylvis Burmanicis fusius descripsi et iconibus illustravi.

182. *STEREOSPERMUM NEURANTHIUM*, nov. sp.

Arbor medioeris, novellis molliter pubescentibus; folia impari-pinnata, juniora praesertim subtus pubescentia, 1-1½ ped. longa; foliola 3 v. 2-juga cum impari longe petiolato, basi subinaequali acuta v. obtusa, petiulo crasso 1-2 lin. longo suffulta, obtusiuscula v. obtusiuscule apiculata, 2-4, nonnunquam usque ad 5-6, poll. longa, integra, rigide chartacea, juniora subtus canescenti-tomentosa denuo magis minusve scabrescentia, supra scabrescentia glabrescentia et subrugulosa; flores conspicui, pallide lilacini v. cyanescenti-albi, atropurpureo-venosi, pedicellis 4-7 lin. longis pubescentibus apicem versus bibracteolatis, in paniculam breviusculam subcymiformem pubescentem terminalem dispositi; calyx c. 4 lin. longus, pubescens, breviter 4-lobus; corolla campanulato-infundibuliformis, subcurva, puberula, lobis leviter undulato-crispatis; capsulae elongato-lineares, cylindrico-4-gonae, glabrae, 1-1½ ped. longae; semina et septum uti in *S. chelonioide*.—*Pegu.*

*ACANTHACEAE.*

183. *RUELIA FLACCIDA*, nov. sp.

Herba debilis, pilosa, ramosa et suberecta, 1½-2 pedalis, caulibus longe et patenter pilosis; folia ovata, basi contracta et in petiolum gracilem pilosum ½-¾ poll. longum attenuata, obtusa, 1½-2 poll. longa, membranacea, obsolete crenato-dentata, praesertim supra parce pilosa; flores parviusculi, pallide corulei, inter bracteos foliaceas obovato-oblongas obtusas v. emarginatas pilosas fimbriatas vulgo solitarii et sessiles; calyx 3 lin. fere longus, lobis linearibus, ciliatis et pilosis; corolla c. 6 lin. longa, tubuloso-infundibuliformis, glabra, tubo breviusculo, lobis brevibus rotundatis; stamina 4, filamenta longe pilosa; stylus simplex, 6 lin. fere longus, glaber; ovarium glabrum.—*Pegu.*

184. *RUELLIA MACROSIPHON*, nov. sp. (R. sp. T. And. in Linn. Proc. IX. 461 in nota).

Herba perennis? subsimplex, 2-3 pollicaris, caulibus hirsutis, novellis pilis albis crispis sublanuginosis; folia lineari-lanceolata v. linearia, c. 2 poll. longa, acuminata, in petiolum brevissimum attenuata, integra, membranacea, ciliata, utrinque præsertim secus nervos hirsutula; flores magni, solitarii, sessiles, bracteis 2 foliaceis pedunculum brevem axillarem terminantibus insidentes; bracteæ lineari-lanceolatae, calyce pluries longiores, structura et indumento foliis similes; calycis segmenta lineari-subulata, c.  $2\frac{1}{2}$  poll. longa, minute puberula; corolla tubuloso-infundibuliformis, c. 2 poll. longa, extus parce pilosula, lobis magnis rotundatis, tubo pollicari gracili in corollæ partem efflatam sensim ampliata; stylus longissimus, parce hirsutus; stamina 4, subæquilonga, inclusa; filamenta gracilia, parce hirsuta.—*Prome*? (Col. Eyre). *R. suffruticosa*, Roxb., arcte affinis.

185. *STROBILANTHES* (HEMIGRAPHIS) *BURMANICA*, nov. sp.

Herba decumbens ramosissima pilis albis patentibus cum glanduliferis intermixtis vestita, cauli ramisque 4-gonis; folia ovata ad ovato-lanceolata, basi in petiolum  $\frac{1}{2}$ -2 poll. longum pilosum angustata, obtusiuscula,  $1\frac{1}{2}$ -2 poll. longa, membranacea, crenato-dentata, utrinque parce pilosa; flores pallide cyanei, passim solitarii et axillares, frequentius autem in spicas longiores v. breviores foliaceo-bracteatas pilosas pedunculatas axillares et terminales digesti; bracteæ ovato-lanceolatae, obtusiusculæ, integre, parce pilosæ et longe ciliatæ, inferiores usque ad 7 lin. longæ; bracteolæ nullæ; calyx pilosus, segmentis linearibus 4 lin. longis; corolla rugata, 6 lin. circiter longa, glabra, ore pubescens, sensim in tubum attenuata, lobis obtusis rotundatis; antheræ 2-loculares, pallide violaceæ; filamenta crassa, piloso-barbata; stylus inæquali-2-fidus; capsulæ 4 lin. longæ, compresso-4-gonæ, obovato-lineares, acutæ, glabræ, a basi fere 8-spermæ; semina plus quam  $\frac{1}{2}$  lin. in diametro, anguste marginata.—*Ava*, *Prome*, *Pegu*. *S. (Hemigraphidi) Pavalæ*, quacum cl. T. Anderson confudit, affinis.

186. *STROBILANTHES* (HEMIGRAPHIS) *GLANDULOSA* (*Hemigraphis glandulosa*, T. And. MS. in Kurz, And. Rep. App. B. 13.)

Herba ramosa, glanduloso-puberula; folia lanceolata v. oblongo-lanceolata, obtusiuscule acuminata, in petiolum glandulosum brevem attenuata, 2-2 $\frac{1}{2}$  poll. longa (superiora minora) repando-dentata, præsertim subtus secus costam glanduloso-puberula, supra glabrescentia; flores parviusculi, pulchre lutei, in axillis bractearum foliacearum vulgo solitarii, spicas 1 v. 2 axillares et terminales interruptas longe-pedunculatas foliaceo-bracteatas efformantes; bracteæ foliis caulinis similes sed multo minores, obtusæ, superiores sensim minores; bracteolæ calyce breviores, obovato-oblongæ, viscoso-hirsutæ; calycis segmenta lineari-spatulata, obtusa, glanduloso-hirta, c.  $2\frac{1}{2}$

lin. longa; corolla c. 3. lin. longa, campanulato-infundibuliformis, tubo brevi extus puberulo intus lævi, lobis rotundatis; stylus et filamenta glabra; capsulæ clavatæ, compressiuscule-4-gonæ, calycis longitudine v. paullo longiores, apiculatæ, glanduloso-puberulæ, abortu vulgo 2-3-spermæ.—*Andamans.* Ex affinitate *S. (Hemigraphis) Griffithianæ.*

187. *STROBILANTHES NEESII*, nov. sp.

Frutex magnus, 10-12 pedalis, ramulis puberulis glabrescentibus; folia lanceolata ad oblongo-lanceolata, breve acuminata, in petiolum  $\frac{1}{2}$ -1 $\frac{1}{2}$  poll. longum attenuata, obsolete repando-dentata, 5-7 et sæpius usque ad 10 poll. longa, membranacea, utrinque pilis minutis adpressis adspersa, subtus secus costam puberula; flores majusculi, in spicas densas bracteatas sessiles denuo elongatas laxas interruptas axillares et terminales dispositi; bracteæ inferiores v. potius folia floralia foliaceæ, valde caducæ, c.  $\frac{1}{2}$  poll. longæ v. longiores, setis brunneis ciliatæ, apicem versus fissæ et serratæ; bracteæ veræ oblongo-lineares, calyce breviores, apicem versus vulgo parce serratæ, acuminatissime, glanduloso-pilosæ; bracteolæ 2, calycis longitudine, lineari-lanceolatæ, acuminatæ, basi attenuatæ, glanduloso-hirsutæ; calycis segmenta c. 6 lin. longa, v. longiora, lincaria, canescentia, ciliata, acumen versus sæpius glanduloso-hirsuta; corolla 1 $\frac{1}{2}$ -1 $\frac{1}{2}$  poll. longa, purpurea, extus glabra, intus fauce secus plicam duplicatam pubescens, tubo longo et gracili; stamina 2 (?); filamenta glabra, filiformia, alte adnata; stylus hirsutus; capsulæ lineari-clavatæ, calyce paullo longiores, glabræ, acumine parce hirtulæ, 4-spermæ; semina sericea.—*Martaban. S. fimbriatæ*, N. E., maxime affinis, sed indumento glanduloso nigrescente, corolla et filamentis glabris differt.

188. *STROBILANTHES FETIDISSIMA*, nov. sp.

Herba ramosa, caulibus divaricatis subteretibus, plus minusve dense fulvo-pilosa; folia ovata, basi in petiolum longum gracilem fulvescenti-pilosum attenuata, acuminata, membranacea, 3-5 poll. longa, serrato-dentata, utrinque albedo v. ochrascenti-hirsuta; flores cyanei, conspicui, spicam laxiusculam brevem albedo-pubescentem pedunculo brevi axillari dense fulvescenti-hirsuto suffultam v. subsessilem efformantes; bracteæ obovato-cuneatæ, c. 8 lin. longæ, obtusæ, herbacæ, glanduloso-hirsutæ; bracteolæ bracteis conformes sed angustiores et subbreviores; calyx bractearum longitudine, adpresse glanduloso-puberulus, segmentis profunde lobulatis; corolla 1 $\frac{1}{2}$  poll. fere longa, glabra; filamenta glabra; stylus hirsutus; capsulæ c. 8 lin. longæ, glaberrimæ; semina fere 2 lin. in diametro, adpresse villosa.—*Martaban. S. rufescenti* affinis.

189. *STROBILANTHES PTEROCAULIS*, nov. sp.

Herba annua, robusta, erecta, ramosa, sparse hirsuta, caulibus crassiusculis quadrangulati-alatis, alis herbaceis dense fimbriatis; folia 8-12 poll.

longa, obovato-oblonga, basi angustato-cuneata ciliata in petiolum crassum brevissimum (2-3 lin.) decurrentia, breve acuminata, crenato-dentata, membranacea, utrinque plus minusve hirsuta; flores parvi, flavescentes, spicas breves dense bracteatas glandulosas 3-4-nas in paniculam axillarem dispositi; pedunculi et ramificationes acute 4-angulati, anguste alati, et dense hirsuto-ciliati; bracteae obovato-cuneatae, obtusae, 3-4 lin. longae, glanduloso-fimbriatae et apice pilis hyalinis articulatis glanduloso-hirsutae; bracteolae 2, calycis longitudine, obovato-linearia, apice glanduloso-hirsutae; calycis segmenta linearia, obtusiuscula, 3 lin. fere longa, hyalino-chartacea, apice parce glanduloso-hirsuta; corollae omnes casae; capsulae calycis longitudine v. paululo longiores, lineari-oblongae, 4-angulares, apice hirsutae, 4-spermae.—*Pegu. St. imbricatae*, NE., affinis.

190. *STROBILANTHES KARENSIUM*, nov. sp.

Herba perennis, ramosa, magis minusve albo-hirsuta; folia caulina inferiora brevissime petiolata, superiora subsessilia, ovata, brevissime acuminata, membranacea, crenata, utrinque hirsuta, 2-3 poll. longa v. longiora; spicae breves, densiusculae, infra basi foliolis nonnullis floralibus subsessilibus hirsutissimis sustentae, pedunculo stricto hispido terminali v. axillari suffultae; bracteae lineares, c. 4 lin. longae, obtusiusculae, dense glanduloso-pubescentes; bracteolae lineari-subulatae, glanduloso-pubescentes; calyx subscariosus, bracteolarum longitudine, segmentis lato-linearibus albedo-marginatis sursum pubescentibus; corolla cyanea, pollicem fere longa, glabra; filamenta secus partem adnatam hirsuta; capsulae bracteolarum longitudine, dorso pubescentes.—*Martaban.* Habitu *S. acrocephali*, characteribus essentialibus autem *S. glomeratae* proxima.

191. *S. SUBFLACCIDA*, nov. sp.

Herba gracilis, glabra, caulibus obsolete 4-gonis sulcatis; folia lanceolata ad oblongo-lanceolata, acuminata, basi in petiolum  $\frac{1}{2}$  poll. longum attenuata, repando-dentata, flaccida, membranacea, 5-6 poll. longa, supra glabra subtus pilis minutis adpressis albidis adpersa; spicae dense et minute adpresse hirsutae; bracteae lato-obovato-oblongae ad oblongae v. obovato-lanceolatae, obtusissimae v. emarginatae, minute puberulae, enerviae, (purpureo?) coloratae, c. 2 lin. longae; bracteolae paullo breviores, minus obovatae, 1-nerviae, minute adpresse pubescentes; calyx bilabiatus, labio superiore glabro usque ad  $\frac{1}{2}$ , partem trilobo, lobis obtusis obsolete ciliatis, labio inferiore fere usque ad basin bifido, lobis linearibus obtusis, 1-nerviis extus minute pubescentibus; capsulae 2-2 $\frac{1}{2}$  lin. longae, calycem non superantes, clavato-oblongae, glabrae.—*Tenasserim.* (Helf. 6114).

192. *STROBILANTHES DASYSPERMA*, nov. sp.

Herba erecta, ramosa, subglabra, 3-4 pedalis; folia inferiora magna, 6-8 poll. longa, oblongo-lanceolata ad lanceolata, basi cuneata in petiolum bre-

viusculum decurrentia, acuminata, serrato-dentata, membranacea, ciliata et supra pilis raris brevibus adpersa, subtus glabra et subglauescentia; superiora caulina multo minora et basi magis rotundata, v. cordata, ovata, haud decurrentia, brevo petiolata v. summa sessilia; flores cyanei, in capitula parva glanduloso-puberula pedunculata congesti, paniculam spuriam terminalem glanduloso-puberulam efformantes; bracteae parvae, oblongae, acutae, glandulosae; calyx glandulosus, segmentis linearibus 3 lin. fere longis; corolla glabra, infundibuliformis, poll. fere longa; filamenta et stylus sparse pilosi; capsulae calycis longitudine, obovato-4-gonae, glanduloso-pubescentes, 4-spermae, seminibus stupposo-villosulis.—*Pegu.* Habitu *S. Børhaavioidis*, T. And., assimilis, floribus capitatis &c., autem in vicinitatem *S. pentstemonoidis*, T. And., referenda.

193. *BARLERIA STENOPHYLLA*, nov. sp.

Herba perennis, inermis, 1-1½ pedalis, subglabra, ramis erectis gracilibus, omnibus partibus plus minusve nitentibus; folia anguste linearia, 3-4 poll. longa, c. 2 lin. lata, spinescenti-acuta, subsessilia, coriacea, integra, supra adpresse hirsutula et sublucida; flores magni, sessiles, fasciculati, bracteati axillares et terminales; bracteae lucidae, rigidae, ovato-lanceolatae, pungenti acuminatae, spinescenti-ciliatae, extus secus costam adpresse hirsutae; sepala exteriora oblonga, apice 2-fida, rigide ciliata, poll. fere longa, glabra; interiora brevissima, lineari-lanceolata, adpresse pubescentia; corolla circ. 2-pollicaris, puberula, cyanea?, tubo gracili sesquipollicari, lobis 8 lin. longis, rhomboideo-oblongis apiculatis crenatis; capsulae desunt.—*Ava* (Dr. J. Anderson).

194. *NEURACANTHUS GRANDIFLORUS*, nov. sp.

Herba divaricata v. subrecta, subrigida, ramis retrorse-hirsutis v. lineis 2 v. 4 retrorse villosis notatis; folia parva, 1½-2 poll. longa, vulgo obovata v. oblonga, obtusiuscula v. breve acuminata, basi in petiolum brevissimum latum attenuata v. superiora subsessilia, obsolete dentata, membranacea, glaberrima; flores majusculi, pallide v. intense cyanei, spicas elongatas densas v. lexas subtetragonas hirsutas rigide-bracteatas ex foliorum axillis v. e rhizomate protrusas efficientes; bracteae ovato-lanceolatae, rigidae, 5-nerviae, pubescentes et hirsutae, acuminatae, pungentes; calyx bilabiatus, pubescens, secus segmenta linearia parce pilosus, prominenter 5-costatus; corolla ½ poll. longa, rugata, lobis obtusis; capsulae tetragono-lanceolatae, acuminatae, glabrae, 3 lin. longae, 4-spermae; semina sericeo-splendentia.—*Prome.*

195. *NEURACANTHUS SUBUNINERVIS*, nov. sp.

Herba erecta, probabiliter 1-2 ped. alta; folia adulta &c., ignota; flores albi, parvi, in spicas laxiuscule-bracteatas subtetragonas glandulosas et parce pilosas e rhizomate protrusas disgesti; bracteae lanceolatae, pungenti-acuminatae, rigide membranaceae, c. 3 lin. longae, concavae, medio prominenter

costatæ, costis autem 4 lateralibus obsoletis, glanduloso-puberulæ, secus nervos pilosæ; bracteolæ bractearum longitudine, falcato-lineares, sub-3-nerviæ, acuminatæ, glanduloso-puberulæ et piloso-ciliatæ; calyx profunde, fere usque ad basin, 5-fidus, nervis evanidis, glanduloso-puberulus et piloso-ciliatus, lobo superiore majore c. 4 lin. longo, lineari, acuto, lobis lateralibus paullo brevioribus, subulatis, 2 inferioribus basi tantum connatis et angustioribus; corolla alba, intus præsertim ad labellum brunneo-maculata, extus puberula, 4 lin. fere longa, tubo 2 lin. longo; labium superius emarginatum, marginibus reflexum, inferius 3-lobum, lobis oblongis rotundatis mediano sub-breviori; antherarum loculi compressi, barbati, obliquæ; filamenta brevissima, fauci inserta; reliqua ignota.—*Prose.*

196. *LEPIDAGATHIS STROBILINA*, T. And. MS.

Herba 1-2-pedalis, glabra. caulibus teretibus elevato-4-lineatis; folia lanceolata, basi cuneata in petiolo decurrentia, acuminata, membranacea, integra, 7-8 poll. longa, glabra et nitentia; capitula florum laxa, terminalia, majora; bractæ c. poll. longæ, oblongo-lanceolatæ, acuminatæ, tenuiter chartaceæ purpureo-lilacino-tinctæ, 1-nerviæ et reticulatæ, glanduloso-puberulæ; bracteolæ bracteis conformes, angustiores; calyx magnus; corolla magna, purpureo-lilacina, poll. fere longa, infundibuliformis, tubo brevi; capsulæ desunt.—*Martaban.* (Revd. Parish).

197. *JUSTICIA DASYCARPA*, nov. sp.

Herba ramosa, 1½-3 pedalis, subglabra, caulibus sæpius lineis 4 hirtulis notatis; folia ovata, passim subobliqua, in petiolo gracili longo decurrentia, 3-5 poll. longa, breve acuminata, integra, membranacea; pilis minutis adpressis scabra; flores parvi, candidi, spicas breves laxè bracteatas solitarias axillares v. plures terminales efformantes; bractæ ovatæ ad ovato-orbiculares, brevissime acuminatæ, 3-4 lin. longæ, membranacæ, virides, sparse ciliatæ; bracteolæ calyce paullo longiores, lineari-lanceolatæ, puberulæ; calyx 1½ lin. longus, puberulus, lobis lineari-lanceolatis acuminatis; corolla 3½-4 poll. longa, labio superiore oblongo obtuso, inferiore 3-lobo; antheræ albæ; capsulæ fere 4 lin. longæ, clavatæ, dense puberulæ, 4-spermæ; semina verruculoso-aspera.—*Martaban.* *J. Atkinsonianæ*, T. And., affinis, sed floribus longe distat.

198. *JUSTICIA CALONEURA*, nov. sp.

Herba perennis, erecta, glabra, 2-3 pedalis; folia elliptico-oblonga ad lanceolata, acuta v. acuminata, basi cuneata et secus petiolum totum foliaceo decurrentia, 6-8 poll. longa, integra v. subintegra, membranacea, glabra v. subtus secus nervos laterales numerosos approximatos fugaciter adpresso puberula; spicæ glabræ, terminales, pedunculis brevissimis v. sessiles; bractæ decussatim oppositæ, sub-orbiculares, acutæ v. apiculatæ, ciliatæ, c. ½ poll. longæ, virides et nervosæ; bracteolæ lineari-lanceolatæ, acuminatæ; calycis



segmenta linearia, minute pubescentia; corolla  $\frac{1}{2}$  poll. longa, extus puberula, intus secus filamentorum bases adnatas villosa, straminea, labio inferiori 3-lobo obscure-striato, labio superiore paullo longiore, concavo, 2-denticulato; capsulæ desunt.—*Martaban.* Præcedenti affinis.

199. *JUSTICIA FLAYA*, nov. sp.

Herba 2-3 pedalis, erecta, ramosa, subglabra, ramis (præsertim superioribus) 6-5-gonis, parce hirsutulis; folia ovata ad ovato-lanceolata, basi angustata et in petiolum longiorem v. breviorē indistincte hirsutum decurrentia, acuminata, 4-6 poll. longa, integra, membranacea, siccando nigrescentia, utrinque pilis raris brevibus adspersa; flores lutescentes, pedicellis brevissimis, in racemos breves cymæformes paucifloros glabros axillares petioli circiter longitudinis dispositi; bractæ et bracteolæ remotæ, lineares, parvæ, glabræ; calyx glaber, c.  $1\frac{1}{2}$  lin. longus, lobis lineari-lanceolatis, acuminatis; corolla c.  $3\frac{1}{2}$ -4 lin. longa extus secus venas pubera, tubo brevi, labio superiore concavo, inferiore 3-lobo, faucem versus rugato, lobis rotundatis; filamenta glabra; anthera inferior calcarata; capsulæ clavatæ, tumidæ, acutæ, glabræ  $\frac{1}{2}$  poll. fere longæ, 4-spermæ; semina minute rugulosa.—*Martaban.*

200. *DICLIPTERA SPECIOSA*, nov. sp.

Herba annua, erecta, ramosa, 1-3 pedalis, pilosa, caulibus sub-teretibus lineis 4 elevatis notatis plus minusve glabrescentibus; folia ovata ad ovato-oblonga et lanceolata, in petiolum pilosum v. substupposo-ciliatum 1-2 poll. longum decurrentia, breve acuminata, 5-7 poll. longa, integra, membranacea, utrinque pilis crispatis adspersa; flores albi, raro pallide cyanei, in cymas brachiatas longius v. brevius pedunculatas glanduloso-pubescentes v. pilosas congregati et paniculam magis minusve compositam efficientes; bractæ obovato-lineares, obtusæ (v. in var.  $\beta$  acutæ), c. 3-4 lin. longæ; bracteolæ dimidio breviores, lineari-subulatæ; calyx bracteolis vix brevior, minute puberulus, segmentis subæqualibus, lineari-subulatis et minute ciliolatis; corolla 7-8 lin. longa, resupinata, tubo  $2\frac{1}{2}$  lin. fere longo, labio superiori lineari-lanceolato, obtuso, lobo mediano brevi reflexo, labio inferiore 3-lobo, cymbiformi-complicato, lobis 2 lateralibus horizontaliter patentibus rotundatis; antheræ superpositæ, albæ; capsulæ lato obovato-cuneatæ, glanduloso-puberulæ, c. 4 lin. longæ, 4-spermæ; semina verruculis minutis flavescentibus aspera.—*Pegu.*

*Var.  $\alpha$ . genuina*, bractæ obtusæ, glanduloso-puberulæ; caules glabrescentes; corolla alba, labio inferiore coccineo-punctato; pedunculi glanduloso-puberuli, breviores (forma umbrosa).

*Var.  $\beta$ . pilosa*, caules, inflorescentia &c., patenter-pilosa; bractæ lineares acutæ, pedunculi vulgo longiores; corolla præcedentis, raro pallide cyanea, intus atropurpureo-maculata, (forma arida, an species?)

Acanthacearum genera in regno Burmanico adhuc observata secundum systema Neesianum paullisper mutatum sic distinguenda :

Subord. I. THUNBERGIEÆ. *Calyx ad annulum dentatum v. nudum reductus.* Corolla 5-loba, subregularis. Antheræ 2-loculares, loculis parallelis. Semina globosa, placentæ cupulari insidentia. *Capsule rostratæ.*

1. *Thunbergia*, L. F. Genus unicum. Herbæ v. frutices scandentes raro suberecti.

Subord. II. ACANTHACEÆ. *Calyx bene evolutus, 5-partitus -fidus v. dentatus, regularis v. irregularis.* Corolla varia. Antheræ 2 v. 1-loculares, loculis parallelis, obliquis v. superpositis. Semina compressa, raro globosa, retinaculis uncatis v. glanduliformibus sustentata. *Capsule non rostratæ.* Herbæ v. frutices sæpius erecti, raro scandentes v. prostratæ.

Trib. 1. ACANTHEÆ. *Calyx inæqualis. Corolla fissa in labellum unicum magnum expansa. Antheræ 1-loculares, v. eæ paris inferioris oblique 2-loculares.* Capsulæ a basi seminiferæ. Semina compressa, retinaculis uncatis sustentata.

\* Corolla in labellum magnum expansa, lobis superioribus omnino suppressis v. rudimentariis, tubus brevissimus v. nullus.

2. *Acanthus*, L. Spicæ  $\infty$ -floræ. Antheræ omnes 1-loculares.

2. *Blepharis*, Juss. Spicæ unifloræ ; flores bracteis pluribus sæpius spinosis sterilibus circumdati. Antheræ paris inferioris 2-loculares.

\*\* Corollæ tubus longus, limbus 5-lobus usque ad tubum fissus.

4. *Crossandra*, Salisb. Bractæ inermes, in acumen spinosam productæ.

Trib. 2. RUELLIEÆ. *Calyx magis minusve irregularis, sæpius bilabiatus.* Corolla infundibuliformis, hypocraterimorpha v. raro ringens. Stamina 4 v. 2 ; antheræ 2-loculares, loculis parallelis, rarissime obliquis (nec autem superpositis). Capsulæ basi sterili attenuatæ v. a basi seminiferæ. Semina compressa, retinaculis uncatis sustentata.

\* *Barlerieæ* Calyx 3-partitus, sepalis decussatis, 2 exterioribus sæpius majoribus. Capsulæ a basi seminiferæ.

5. *Barleria*, L. Corolla infundibuliformis. Stamina 4, raro 5, quorum 2 v. 3 sæpius sterilia et rudimentaria ; antherarum loculi paralleli.

\*\* *Neuracanthææ*. Calyx 5-fidus, irregularis, v. bilabiatus, v. segmento superiori tantum maximo. Corolla bilabiata

et ringens, v. infundibuliformis. Antherarum cellulæ parallelæ v. obliquæ. Capsulæ a basi seminiferæ.

- Calyx bilabiatus. Capsulæ dissepimenta non secedentia. Spicæ rigidæ v. scariosæ, vulgo 4-stichæ.

6. *Neuracanthus*, *N. E.* Stamina 4; antherarum loculi obliqui. An potius cum genere sequenti conjungendum?

7. *Lepidagathis*, *Willd.* Stamina 4; antherarum loculi paralleli.

- Calycis segmentum superius maximum et bracteiforme. Capsulæ dissepimenta in lamellas 2 seminifera secedentia.

8. *Phaylopsis*, *Willd.* Stamina 4; antherarum loculi paralleli. Spicæ breves bracteis membrancis mollibus vestitæ.

- \*\*\* *Ruellinæ*. Calyx 5-fidus, segmentis magis minusve inæqualibus. Corolla infundibuliformis. Stamina 4; raro 2. Capsulæ magis minusve 4-gonæ, cum v. absque basi contracta sterili.

9. *Ruellia*, *L.*

10. *Hemigraphis*, *N. E.* } Genera inter se valde affinia postea a  
11. *Strobilanthes*, *Bl.* } me accuratius eruenda.

Trib. 3. ERANTHEMÆ. Calyx regularis, 5-dentatus v. fidus. Stamina 2, raro 4; antheræ 2-loculares, loculis parallelis. Capsulæ 2-4-spermæ, in basin longam sterilem contractæ. Semina compressa, retinaculis uncatis suffulta.

- Spicæ v. paniculæ nudæ, i. e. bracteis minutis, persistentibus.

12. *Asystasia*, *Bl.* Corolla infundibuliformis, in tubum longiusculum v. rarius longissimum attenuata. Flores omnes fertiles. Capsulæ vulgo 4-spermæ.

13. *Eranthemum*, *L.* Flores 2-5-morphi, fertiles minuti, clausi v. aperti; steriles speciosi, hypocraterimorphi, limbo subregulari tuboque longissimo.

- Spicæ foliaceo-bracteatae, bracteis nonnunquam deciduis.

14. *Daedalacanthus*, *T. And.* Corolla contorta, hypocraterimorpha, limbo regulari explanato v. complicato, capsulæ vulgo 4-spermæ.

15. *Ecbolium*, *Kurz.* Corolla imbricata, hypocraterimorpho-bilabiata limbo irregulari, labio superiori reflexo lineari. Capsulæ vulgo 2- raro abortu 1-spermæ, (ovuli in ovari loculis semper 2).

Trib. 4. JUSTICIEÆ. Calyx regularis. Corolla ut plurimum ringens v. bilabiata. Stamina 2; antheræ 2-loculares, loculis superpositis. Capsulæ compresso 4-gonæ, in basin sterilem contractæ. Semina plana, retinaculis uncatis suffulta.

- O Corollæ tubus longus, gracilis, limbi lobos longitudine superans.
16. *Rhinacanthus*, *N. E.* Limbi labium superius angustum, erectum. Antherarum loculi haud calcarati.  
OO Corollæ ringentis tubus brevis.
17. *Justicia*, *L.* Antherarum loculi inferiores basi mucronati et calcarati. Capsulæ dissepimenta persistentia.
18. *Rungia*, *N. E.* Characteres præcedentis, sed capsulæ dissepimenta a valvis secedentia.  
OOO Corolla bilabiata, tubo gracili longitudine loborum v. brevior.
19. *Dicliptera*, *Juss.* Capsulæ dissepimenta a valvis secedentia.
20. *Peristrophe*, *N. E.* Capsulæ dissepimenta persistentia.

Trib. 5. **APIHELANDREÆ.** *Calyx regularis.* Corolla bilabiata, Stamina 4; *antheræ 1-loculares*, lineares v. oblongæ. Capsulæ vulgo a basi seminifera. Semina plana, retinaculis uncatis suffulta. Fere omnes Americane, inter Indica genus unicum (*Hypæstes*) hic rite referendum, cætera genera hic relata abnormalia esse videntur, viz. *Monothecium* (*Justiciæ* sect. *Rostellariæ* nimis affine) et *Hypæstes triflora*, Roem. et Schult., calyce a congeneris valde discrepans potius generi *Dicliptera* adnumeranda, v. generis novi typum præbens. *Haplanthi* genus infra inter *Hygrophileas* quærendum.

Trib. 6. **HYGROPHILEÆ.** *Calyx regularis v. irregularis, 5-fidus v. -dentatus.* Corolla bilabiata ringens. Stamina 2 v. 4; *antheræ 2-loculares*, loculis parallelis. *Capsulæ planiusculæ v. cylindricæ, sæpius striatæ, sulcatæ v. medio impressæ, a basi seminiferæ.* Semina compressa, retinaculis uncatis suffulta.

- O Corolla infundibuliformis et subringens. Capsulæ cylindricæ v. subcylindricæ. Stamina 4 v. 2.
21. *Phlogacanthus*, *N. E.* Capsulæ 8-∞-spermæ; stamina 4, fertilia.
22. *Cystacanthus*, *T. And.* Characteres præcedentis, sed stamina fertilia 2, cum 2 rudimentariis.
23. *Graptophyllum*, *N. E.* Capsulæ 4-spermæ. Stamina 4, omnia fertilia.

OO Corolla ringens. Stamina 2. Capsulæ planiusculæ, sursum sæpius latiores.

\* Antheræ basi sæpius barbatæ v. villosæ. Racemi v. paniculæ nudæ.

24. *Andrographis*, *Wall.* Antheræ 2-loculares.

25. *Haplanthus*, *N. E.* Antheræ 1-loculares.  
 \*\* Antheræ nudæ.
26. *Hemiadelphis*, *N. E.* Spicæ conspicue bracteatae.  
 OOO Corolla bilabiata v. ringens. Stamina 4. Capsulæ magis minusve teretes, sæpius sulcatae.
27. *Hygrophila*, *R. Br.* Calyx tubulosus, regularis. Corolla bilabiata.
28. *Nomaphila*, *Bl.* Calyx usque ad basin 5-fidus. Corolla ringens.
- Trib. 7. *NELSONIÆ.* Calyx 5-fidus, ut plurimum subirregularis. Corolla infundibuliformis v. personata. Stamina 2 v. 4; antheræ 2-loculares, loculis parallelis. Capsulæ a basi seminifera. Semina minuta, *globosa, retinaculis glanduliformibus suffulta, v. iis omnino deprivata.*  
 O Stamina 2.
29. *Nelsonia*, *R. Br.* Corolla ringens.  
 OO Stamina 4.
30. *Ebermaiera*, *N. E.* Corolla ringens.
31. *Cardianthera*, *Ham.* (*Adenosma*, *N. E.* non *R. Br.*). Corolla personata.

### VERBENACEÆ.

#### 201. *VITEX CANESCENS*, nov. sp.

Arbuscula 25—35 pedalis, partibus omnibus junioribus canescenti v. gilvescenti-pubescentibus; folia digitatim 3—5—foliolata, petiolo 1—2—pollicari tomentello suffulta; foliola sæpius breve (intermedio multo longius) petiolulata, ovata v. ovato-lanceolata, ad elliptica et elliptico-lanceolata, acuminata v. acuta, basi attenuata, integra, v. raro crenato-serrata, membranacea, juniora utrinque dense canescenti-pubescentia, supra denuo scabrescenti-puberula; flores albi, parvi, pedicellis gracilibus 1—2 lin. longis tomentellis suffulti, glomerati, paniculas cinereo- v. gilvescenti-tomentellas compositas v. simplices terminales et supra foliorum delapsorum ortas efficientes; calyx cinereo-pubescent, lin. circiter longus, 5-dentatus; corolla calyce duplo longior, extus tomentosa; drupæ obovoides, læves, p̄si magnitudinis, calyce magis minusve explanato insidentes.—*Prome. V. Negundo*, *L.*, affinis, differt in primis floribus graciliter pedicellatis.

### LAURINEÆ.

#### 202. *MACHILUS FRUTICOSA*, nov. sp.

Frutex glaber, gemmis velutinis; folia ovata ad ovato-oblonga, 2½—4 poll. longa, basi rotundata subdecurrentia, petiolo crasso lato 2—5 lin. longo, glabra, rigide coriacea, obtusa et passim rotundata, marginibus recurvis, subtus glauca, nervis, simul cum reticulatione copiosa, prominentibus;

flores... ; paniculæ folio longiores, glabræ, longe-pedunculatæ ; pedicelli sub fructu brevissimi (1—1½ lin. longi) et incrassati uti in *Phœbe* ; perianthium minute adpresse pubescens, segmentis patentibus oblongis obtusis ; fructus globosi, glabri, pisi magnitudinis.—*Martaban* (Dr. Brandia).

203. *TETRANTHERA* (CYLICODAPHINE) *CALOPHYLLA*, nov. sp.

Arbuscula, novellis fulvescenti-tomentellis ; folia ovato-oblonga ad lanceolata, basi acuta v. acuminata, longius v. brevius acuminata, petiolo ½—1 poll. longo magis minusve tomentoso suffulta, rigide membranacea, 3½—7 poll. longa, supra lutescenti-viridia et (costa immersa excepta) glabra, subtus pallida, tomentella, penninervia, prominenter reticulata ; flores in umbellam parvam bracteatum congesti ; umbellæ pedunculo 2½—3½ lin. longo tomentello solitario axillari suffultæ v. secus ramulum novellum axillarem fulvo-tomentosum quasi racemiformem disgestæ, raro in racemum verum brevem corymbiformem pedunculo fulvescenti-puberulo suffultum efformantes ; involucri foliola concavo-rotunda, puberula ; perianthium extus pubescens ; filamenta glabra ; antheræ 4-locellatæ ; baccæ oblongo-ovatæ, ½ poll. fere longæ, læves, carnosæ, cupulâ majusculâ truncatâ extus minute pubescenti in pedicellum brevem crassum attenuatâ suffultæ.—*Martaban, Tenasserim.* Species quoad folia et inflorescentia variabilis, *Cylicod.* *Wightianæ, N. E.*, arcte affinis ejusve probabiliter varietas insignis ?

204. *TETRANTHERA* (CYLICODAPHINE) *NUCULANEA*, nov. sp.

Frutex ramulis teretibus tomentosis ; folia obovato-oblonga ad oblongo-lanceolata, petiolis 4—5 lin. longis pallide-tomentosis suffulta, basi acuta, 5—6 poll. longa, obtusiuscule apiculata, crasse chartacea, supra glabra, subtus glauca et plus minusve dense puberula, reticulatione inter nervos laterales crassiusculos tenui sed conspicua ; flores . . , apparenter umbellas subsessiles axillares formantes ; pedunculus in speciminibus fructigeris crassissimus vix 3 lin. longus ; fructus pallide straminei, oblongi, c. 6—7 lin. longi, læves, cupula integra magna carnosâ suffulti.—*Tenasserim.* (Revd. Parish).

205. *TETRANTHERA* (CYLICODAPHINE) *ALBICANS*, nov. sp.

Arbuscula, novellis minute puberulis ; folia oblongo-lanceolata ad lanceolata, basi attenuata, petiolo 5—8 lin. longo gracili subglabro suffulta, breve acuminata, chartacea v. tenuiter coriacea, 6—10 poll. longa, glabra, subtus albida, reticulatione inter nervos tenues prominentes tenui sed conspicua ; umbellæ involucriatæ, velutino-tomentosæ, pedunculo gracili c. 4 lin. longo canescenti-tomentoso suffulti, in racemum abbreviatum v. subsessilem velutino-tomentosum axillarem v. vulgo supra foliorum delapsorum cicatricibus orientem dispositi ; involucri phylla canescenti-velutina ; fructus . . ; cupula

magna, carnosa, undulato-lobata, in pedicellum crassum attenuata.—*Pegu.*  
Ex affinitate *T. Panamojæ*, *N. E.*

206. *LITSÆA LEIOPHYLLA*, nov. sp.

Arbor inflorescentiis exceptis glaberrima; folia lanceolata v. oblongo-lanceolata, 5—6½ poll. longa, basi subinæquali acuminata, petiolo gracili 1—1½ pollicari glabro suffulta, obtuse acuminata, tenuiter coriacea, glaberrima, supra lucida, subtus vix glaucescentia, supra basi triplinervia et penninervia, obsolete reticulata; flores fulvo-villosi, pedicellis brevibus tomentosis suffulti, racemos axillares petiolo breviores abbreviatis fulvo-villosos simplices formantes; filamenta glabra; baccæ desunt. *Tenasserim v. Andamans.* (Helf. 4330).

207. *DAPHNIDIUM ARGENTEUM*, nov. sp.

Arbor parva, novellis argenteo-sericeis; folia lanceolata v. lato-lanceolata, utrinque acuminata, petiolo 3—5 lin. longo argenteo-pubescente glabrescente suffulta, 3½—6½ poll. longa, crasse chartacea, supra glabra, subtus adpresse argenteo-sericea, penninervia, utrinque laxo reticulata; flores virescenti-lutei, pedicellis brevissimis tomentosis, in racemum brevem tomentosum basi bracteis concavis pubescentibus involucreto disgesti; perianthium 6-fidum, extus adpresse pubescens; antheræ 2-locellatæ; filamenta subglabra.—*Pegu, Martaban.*—Species insignis, foliorum structura et habitu *Beilschmiedia* genus in mentem revocat.

*PROTEACEÆ.*

208. *HELICIA PYRRHOBOTRYA*, nov. sp.

Arbor?, novellis ferrugineo-villosis; folia obovato-lanceolata, breve acuminata, versus basin obtusam attenuata, c. pedem longa, petiolis crassis 2—5 lin. longis suffulta, chartacea, grosse serrata, adulta glabra v. subtus secus costam sparse ferrugineo-pubescentia; flores 1—1½ poll. longi, geminati, pedicellis crassis 1½ lin. longis ferrugineo-villosis suffulti, racemos c. pedem longos robustos dense ferrugineo-villosos axillares efficientes; squamulæ hypogynæ...; ovarium stylusque læves. *Martaban*, (Dr. Brandis).

*PODOSTEMACEÆ.*

209. *HYDROBRYUM LICHENOIDES*, nov. sp.

Plantulæ minutæ gregarie; rhizoma latum membranaceum, lobatum, terræ v. saxis adpressum, viride, vix ½ lin. latum, 2—3 lin. longum; folia perpauca tantum pedicellorum basi sita, squamæformia; pedicelli filiformes, ½ lin. longi; capsulæ globosæ, c. ¼ lin. in diametro, lato-8-costatæ.—*Martaban.* (Revd. Parish).

## URTICACEÆ.

## 210. ELATOSTEMA MEMBRANIFOLIUM, nov. sp.

Suffrutex erectus, ramosissimus, *E. lineolati* habitu, glaberrimus, ramulis 4-quetris, lævissimis; folia alterna, subinæqualia, cum basi inæquali sessilia,  $1\frac{1}{2}$ — $2\frac{1}{2}$  poll. longa, acuminatissima (acumine obtuso et integro), tenuiter membranacea, grosse et obtusiuscule crenato-serrata, utrinque lævia et striis destituta, basi irregulari-triplinervia, nervis tenuibus sed conspicuis, per nervos laterales strictis rectangulares cum costa anastomozantibus; stipulæ minutæ, subulato-lineares; flores minuti, sessiles, capitula (nondum evoluta) parva sessilia in foliorum axillis v. iisdem opposita formantes; perianthium glabrum.—*Tenasserim*, (Dr. Brandis)—*E. lineolato*, Wight, arcte affine, absentia striolarum autem tute distinguendum.

## 211. ELATOSTEMA BULBIFERUM, nov. sp.

Herba monoica v. dioica, erecta,  $\frac{1}{2}$ —1 pedalis, succulenta, simplex v. sub-ramosa, glabra, caulibus teretibus ad internodia bulbiferis; folia opposita, dimorpha, quorum evoluta obliqua, ovata v. ovato-lanceolata, petiolis vix lin. longis suffulta, superiora cum basi inæquali subsessilia,  $2\frac{1}{2}$ — $3\frac{1}{2}$  poll. longa, grosse serrata, herbacea, breve acuminata, glabra, supra striis albis adnatis obtecta, basi triplinervia, passim nervis nonnullis adjectis; folia stipuliformia, lanceolata ad ovato-lanceolata, magis variabilia,  $\frac{1}{4}$ — $\frac{1}{2}$  poll. longa, acuta v. obtusa, integra v. serraturis nonnullis, inferiora vulgo majora; stipulæ minutæ, subulatæ; flores minuti, pedicellati, cymosi; cymi feminei densiores et pedunculis gracilibus brevioribus suffulti; masculi laxi, pedunculo 1—2 pollicari suffulti e tuberibus globulosis crassis axillaribus v. in ramulorum furcationibus sitis subvillosis orti; perianthium glabrum.—*Tenasserim*, *Arracan*.

212. ELATOSTEMA GIBBOSUM, (*Procris gibbosa*, Wall., Cat. 7273).

Herba procumbens, repens, glabrescens, caulibus ascendibus c. semipedalibus florigeris; folio alterna, obovato-oblonga ad trapezoideo-oblonga, subobliqua, cum basi oblique-cordata subsessilia, obtusa v. subobtusa, 2—3 poll. longa, herbacea, grosse rotundato-crenata, supra pilis brevibus albis transverse adnatis adspersa, subtus secus nervos parce pubescentia, basi 3—5—plinervia; stipulæ conspicuæ, membranaceæ, brunneæ, usque ad 3 lin. longæ, lanceolatæ, acuminatæ, persistentes, etiam cæ foliorum abortivorum evolutæ; flores masculi majusculi, c. 1 lin. in diametro, subsessiles, in cymam parvam pedunculo  $1\frac{1}{2}$ —2 poll. longo pubescente axillari suffultam collecti; perianthium glabrum.—*Martaban*, *Tenasserim*.—In vicinitate *E. cornuti* ponendum; an potius generi *Pellionia* adscribendum?

## 213. DORSTENIA GRIFFITHIANA, nov. sp. (D. sp. Griff. Not. Dicot. 403).



Frutex humilis, ramulis angularibus ochraceo-pubescentibus; folia elongato-obovata ad cuneato-elliptica, petiolo crasso  $\frac{1}{4}$ — $\frac{3}{8}$  pollicari pubescente glabrescente suffulta, basi angustata acuta v. rotundata, 8 poll.—1 $\frac{1}{2}$  ped. longa, abrupte acuminata, tenuiter coriacea, integra, supra lævia, subtus scabra; stipulæ setaceæ, pubescentes; flores monoici, in receptaculis capituliformibus involucreatis extus velutinis pedunculatis congregati; pedunculi velutini solitarii, axillares; involucrum sub 4—6 partitum; syncarpia dimorpha, involucri bracteis reflexis velutinis.—*Tenasserim.*

214. *FICUS AFFINIS*, Wall., Cat. 4524.

Arbor mediocris, glabra; stipulæ breves, et parvæ, ovato-lanceolatæ, glabræ; folia elliptica ad ovato-oblonga, basi obtusa v. rotundata, obtusiuscule et subabrupte acuminata, 3—4 poll. longa, chartacea, integra v. subundulata, glabra, basi nonnunquam obscure 3-nervia, nervis lateralibus numerosis et subparallelis secus marginem anastomozantibus, utrinque crebre reticulata; receptacula piperis grani magnitudine v. paullo majora, globosa; flavescentia, pustulis obsoletis aurantiacis adspersa, glabra, basi 3-bracteata, pedunculo brevissimo  $\frac{1}{2}$ —1 lin. suffulta, vulgo geminata in foliorum axillis v. supra foliorum delapsorum cicatricibus; bractæ persistentes, minutæ, lato-triungulares.—*Pegu, Tenasserim, Andamans.*—Prope *F. rhododendri-foliam*, Miq., inserenda.

215. *FICUS GENICULATA*, nov. sp.

Arbor magna epiphytica, ramulis robustis cicatrisatis novellis pubescentibus; stipulæ lato-ovatæ, acutæ, glabræ v. canescentes; folia elliptica, elliptico-ovata v. elliptico-oblonga, petiolo 3—4 pollicari apice geniculato inserta, basi obtusa v. acuta, breve et abrupte acuminata v. apiculata, integra, rigide coriacea, utrinque lucida, basi breve 3-nervia, nervis lateralibus subparallelis et magis approximatis sæpius subobsoletis, reticulatione elegante magis minusve obsoleta raro conspicua percursa; receptacula globosa, pisi minimi v. piperis grani magnitudine, flavida, albo-pustulata, glabra, 3—4 bracteata, sessilia v. subsessilia, in foliorum axillis v. supra eorum cicatribus geminata; bractæ persistentes, lato-rotundatæ, brunneæ, glabræ.—*Pegu, Martaban, Tenasserim.*—Ex affinitate *F. infectoriæ*, Willd.

216. *FICUS INSIGNIS*, nov. sp.

Arbor mediocris, ramulis crassis cicatrisatis tomentellis; stipulæ lato-ovatæ tomentosæ; folia iis *F. geniculatæ* subconsimilia, elliptica ad ovato-oblonga, petiolo 2—3 poll. longo apice geniculato suffulta, basi rotundata v. obtusa, 5—7 poll. longa, obtuse apiculata, integra v. subundulata, glabra, rigide coriacea, supra lucida, nervis lateralibus subparallelis et moderate approximatis, secus marginem arcuato anastomozantibus, subimpressis, reticulatione elegante vix prominente; receptacula cerasi minimi magnitudine,

globosa v. subglobosa, cinerascens albida, roseo-punctata, dense tomentoso-villosa, basi bracteata, pedunculo crasso brevissimo tomentoso suffulta, in foliorum axillis v. supra eorum cicatricibus vulgo geminata; bracteae persistentes, lato-ovatae, scariosae, brunneae, glabrae.—*Prome.* Præcedenti affine.

217. *FICUS CALONEURA*, nov. sp.

Arbor glabra; folia iis *F. Rumphii* consimilia, cordato-ovata, sensim obtusiuscule-acuminata, basi cordata, petiolo 3—4 poll. longo apice geniculato bi-glanduloso suffulta, 4—5 poll. longa,  $2\frac{1}{2}$ — $3\frac{1}{2}$  poll. lata, grosse et remote repando-dentata, tenuiter coriacea, glabra, utrinque opaca, supra haud punctata, nervis lateralibus unacum nervis basilariis omnibus divergentibus et subarcuatis pallidis crassis secus marginem anastomozantibus, nervatione transversali elegante sed tenuiuscula; receptacula desunt.—Burma, sine loco natali, (Dr. Brandis).—Ex affinitate *F. Rumphii*, Bl.

218. *FICUS POMIFERA*, nov. sp.

Frut x scandens, glaber; folia obovata v. sub-rhomboides-ohovata, petiolis 3—4 lin. longis scabridis, basi subcuneata,  $1-2\frac{1}{2}$  poll. longa, obtusa v. subemarginata, glabra, coriacea, marginibus subrecurvis, nervis utrinque 4—5 lateralibus paullo prominentibus, in areolis reticulationis obsoletae lacunosopunctata; receptacula pomiformia v. oblongo-elliptica, c.  $1-1\frac{1}{2}$  poll. crassa, subumbonata, in stipitem brevissimum (c.  $\frac{1}{2}$  lin.) crassum constricta, laevia, miniato-aurantiaca, pedunculo crasso 1—2 lin. longo puberulo suffulta, vulgo solitaria e foliorum axillis v. supra eorum cicatricibus; bractea ad pedunculi apicem 3, persistentes, triangulari-ovatae, subglabrae. Variat.  $\alpha$ . pomiformis, receptacula pomiformia,—*Tenasserim*, (Falconer);  $\beta$ . oviformis, receptacula elliptico-oblonga ad ovoidea,—*Sumatra*.

219. *FICUS PYRRHOCARPA*, nov. sp. (*F. tuberculata*, Wall., Cat. 4539, non Roxb. et aliorum).

Frutex humilis, 1—3 pedalis, ramulis adpresse brunneo-setosis; stipulae lineari-lanceolatae, acuminatae, glabriusculae v. dorso pubescentes; folia obverse lanceolata ad subcuneato-lanceolata, basi cuneata v. acuta, petiolo lineas perpaucas usque ad  $1\frac{1}{2}$  poll. longo adpresse pubescente glabrescente suffulta, breve et obtusiuscule acuminata, integra, crasse membranacea, supra glabra v. pilis minutis inconspicuis adpersa, subtus secus nervos sparse adpresse hirsuta et glabrescentia, nervis arcuatis, reticulatione laxa; receptacula depresso-pyriformia, cerasi magnitudinis, purpurascens-viridia, costata, squamis nonnullis varie dispositis adpersa, praesertim dum juvenilia pilis rigidis adpressis v. subpatentibus brunneis v. rufis oblecta, pedunculis  $\frac{1}{4}$ — $1\frac{1}{4}$  pollicibus pubescentibus crassis suffulta, solitaria e trunco subterraneo orta v.

seccus surculos aphyllus subterraneos errumpentia ; bractæ ad apicem pedunculi 3, ovatæ, breves.—*Pegu, Martaban.*—Ex affinitate *F. ischnopodæ*, etc.

219. *FICUS ANASTOMOZANS*, Wall., Cat. 4513.

Frutex repens, humilis, magis minusve scabro-pubescentia ; stipulæ minutæ, scabræ ; folia oblongo-lanceolata ad lanceolata, basi acuta v. obtusa, petiolo 2—6 lin. longo scabro-pubescente suffulta, magis minusve obtusiuscule-acuminata, 2—4 poll. longa, grosse et irregulariter sinuato-dentata, dentibus rotundatis v. obtusis, membranacea, supra scabro-pubescentia, nonnunquam subglabrescentia, nervis numerosis rectangulari-divergentibus et anastomozantibus ; receptacula ovoidea, piperis grani magnitudinis, umbonata, basi non v. vix constricta, scabro-puberula, pedunculo vix  $\frac{1}{2}$  lin. longo et pubescente suffulta, solitaria e foliorum axillis v. supra eorum cicatricibus errumpentia ; bractæ minutæ.—*Tenasserim.*

220. *FICUS LEPIDOSA*, Wall., Cat. 4541.

Arbor mediocrius, novellis parce pubescentibus ; stipulæ lineari-lanceolatæ, acuminatissimæ, glabræ v. subglabræ ; folia obovata ad elliptica, petiolis 1—2 poll. longis parce pubescentibus glabrescentibus suffulta, basi obtusa, breve acuminata, 5—6 poll. longa, crasse membranacea, supra glabra v. pilis nonnullis brevibus adpersa, subtus parce et breve pubescentia, subpenninervia ; receptacula turbinato-globosa, umbonata, pubescentia, aurantiaco-miniata, cerasi magnitudine, pedunculo 3—5 lin. longo crasso pubescente sustentata, vulgo geminatim e foliorum axillis v. supra eorum cicatricibus erumpentia ; bractæ ad apicem pedunculi, ovatæ, acutæ, glabræ, c. lin. longæ.—*Pegu.*—*F. chrysocarpæ*, Rwdt., affinis, errore quoddam cl. Miquel in Annalis suis me hanc speciem cum *F. diversifolia* identicam declarasse putavit.

### AMENTACEÆ.

221. *QUERCUS EUMORPHA*, nov. sp.

Arbor 20—30 pedalis, glaberrima ; folia ovato-oblonga v. oblonga, nonnunquam inæqualia, basi in petiolum gracilem 5—8 lin. longum glabrum attenuata, breve et obtusiuscule acuminata, 3—4 poll. longa, coriacea, apicem versus leviter obtusiuscule serrata, glabra, concoloria, nervis tenuibus et reticulatione densa subobsoletis ; pedunculus fructiger usque ad 2 poll. longus, apparenter glaber, 1 v. 2 fructus gerens ; glanis ovoidea, 9—10 lin. fere longa, lævis, exserta ; cupula 7—8 lin. in diametro, concava, crasse coriacea, brunnea, glabra, subvernica, junior squamis triangularibus acutis adpressis subdistinctis dein in zonas concentricas angustas inæquales et irregulares confluentibus oblecta v. rugato-rugosa.—*Martaban.*

**222. QUERCUS BRANDISIANA, nov. sp.**

Arbor parva v. mediocris, ramulis canescenti, v. ochraceo-pubescentibus; folia oblonga ad obovato-oblonga, basi sæpius inæquali acuta v. obtusa, 4—5 poll. longa, petiolo 5—8 lin. longo gracili glabro suffulta, breve et obtusiuscule acuminata, obtusiuscule repando-serrata, utrinque subopaca, tenuiter coriacea, supra rugata et glabra, subtus glauca et fugaci-puberula, nervis supra impressis strictis subtus prominentibus sed tenuibus, cum nervatione transversa conspicuis; pedunculus fructiger c. 1, raro usque  $2\frac{1}{2}$  poll., longus, fructus paucos tantum gerens, ochrascenti-tomentosus; glandes juniores depressæ adpresse puberulæ, magis minusve inclusæ, dein exsertæ, ovoidæ, glabræ; cupula canescenti-velutina, concava, c.  $\frac{1}{2}$  poll. in diametro, e zonis circ. 5—6 concentricis lamellatis erosio formata.—*Martaban*.—In sect. *Cyclobalani* inserenda.

**CHLORANTHACEÆ.****223. CHLORANTHUS INSIGNIS, nov. sp.**

Suffrutex  $1\frac{1}{2}$ —2 pedalis, glaber, in sicco sublutescens; folia petiolis 1—2 lin. longis suffulta, linearia, basi acuminata v. acuta, sensim et longissime acuminata,  $3\frac{1}{2}$ — $4\frac{1}{2}$  poll. longa; subcoriacea, integra, glabra, nervis lateribus tenuissimis, vix reticulata; spicæ axillares, fructiferæ 1—2 poll. longæ, simplices, glabræ; bractæ minutæ, crassæ; fructus casi.—*Martaban*.

**SCITAMINEÆ.****HEMIORECHIS nov. sp.**

Flores præcoces, spicati, sessiles. Calyx tubulosus, sursum amplius, 3-fidus. Perianthii tubus calyce brevior filiformis; phylla 3 exteriora æqualia, interiora subæquilonga, basi utrinque corniculata apice 2—3 denticulata; labellum lato-oblongum, concavum, apiculatum. Filamentum phyllis fere duplo brevius, apice incurvum, connectivam supra anthera utrinque mutica vix productum. Ovarium 1-loculare, placentis 3 parietalibus; stylus filiformis; stigma paulum incrassatum, oblique truncatum. Capsula 1-locularis, subplicato-10-sulcata, 3-valvis; semina conica, basi albo-arillata.—Herbæ perennes *Gastrochilo* habitu et characteribus essentialibus affines; scapis radicales pallidis squamati iis *Geodori* haud absimiles.

**224. II. BURMANICA, nov. sp. Tab. VIII.**

Rhizoma album, crassum, repens, hypogæum, nudum; folia post anthesin erumpentia iis *Gastrochili* simillima, lato-oblonga, brevissime acuminata, basi inæquali-rotundata in petiolum brevem decurrentia, glabra; vaginæ striatæ, glabræ; scapi radicales, solitarii, dense tomentelli, a basi usque ad medium bracteis amplis pallidis remotis v. confertis  $1$ — $1\frac{1}{2}$  poll. longis oblongis et subacutis vestiti; flores spicati, sessiles, mediocres; calyx puberulus, albus,

3-fidus, lobis æqualibus acutis ; perianthii phylla exteriora 3 fere semipollicaria, virescenti-albida, oblongo-linearia, apiculata v. 2—3 lobulata, marginibus magis minusve recurva, superiori latiore ; interiora 2 obovato-oblonga, pallide rubella, apice obsolete 2—3 denticulata ; labellum concavum lato oblongum, aurantiacum, basin versus pallidius, intus secum carinam sanguineum carinatum, carina in apiculum 3-angularem acutum excurrente ; antheræ cerino-luteæ, filamenta c. 1 lin. longa, incurva ; capsulæ ovaes, puberulæ, calyce emarcescente coronatæ, c.  $\frac{1}{2}$  poll. longæ ; semina basi arillo albo suffulta.—*Pegu, Martaban, Tenasserim.*

### MELANTHACEÆ.

STEMONA GRIFFITHIANA, nov. sp. Tab. X.

(Gen. nov., Griff. Journ. of Travels p. 149).

Herba erecta, perennis, glabra, rhizomate crasso hypogæo ; folia hysteranthia, ovata, c. 3—5 poll. longa, breve acuminata, petiolo 3—5 poll. longo suffulta, chartacea, glabra, parallelinervia, eleganter transverse venosa, sericanter-nitentia ; flores virescenti v. sordide purpurei, pedicellis strictiusculis poll. circiter longis suffulti, in turionibus erectis aphyllis scapiformibus dein foliatis 3—6 poll. longis corymboso-racemosi ; bractæ lineari-lanceolatæ acuminatæ, c. 3—4 lin. longæ ; perigonium 4-phyllum, phylla poll. longa, v. paulo longiora, lineari-lanceolata, acuta ; stamina 4, filamenta lata, purpurea ; antheræ aureæ, cuspidatæ ; ovarium 1-loculare, ovulis 6, lineari-oblongis ex apice pendulis capsulæ compresso-ovatæ, semipollicares, bivalves, 3—4 spermæ ; semina sulcato-carinata, lineari-oblonga, subapiculata, basi arillo brevi albo aucta.—*Ava, Martaban, Pegu.*

### AROIDEÆ.

HAPALINE, Schott.

Spatha lanceolata sursum plana, basi tantum complanata et spadiceis parti femineæ adnata. Spadix interrupte androgynus, genitalibus rudimentariis nullis. Stamina lineari-lanceolata, peltata, membranacea, areolato-reticulata, subtus marginem versus antheras 4—6 minutas globosas gerentia, spadicem linearem a parte feminea paulo discretum obtegentia. Ovaria singula serie superposita, unilocularia, ovulo solitario erecto ; stigma subsessile, subcapitatum.—Herbæ humiles, radice tuberosa, uni- v. pauci-foliatæ, spathas niveis.

1. H. BENTHAMIANA, Schott. Tab. IX.

Herba c. semipedalis, radice tuberosa, basi albo-vaginata ; folia 3—4 poll. longa, petiolo æquilongo suffulta, oblonga, basi profunde sinuato-cordata, lobis basilaribus complicatis et obtusiuscule prolongatis, glabra, breve acuminata, nervis anastomozantibus ; flores 1—3-ni e rhizomate pro-

trusi, scapo 5—6 poll. longo gracili suffulti ; spatha nivea, lineari-lanceolata ad lanceolata, c.  $1\frac{1}{2}$  poll. longa, reflexa, reticulata ; spadix spathæ fere longitudinis, ejus pars mascula exserta strictiuscula lineari-subulata, alba.—*Martaban.*

#### TABULARUM EXPLANATIO.

Tab. VIII.—*Hemiorchis Burmanica*.—Fig. A, planta florens, magn. nat. ; fig. B, folium cum cauli vaginato, magn. nat. ; fig. 1, perigonii phyllum exterioris ; fig. 2, phyllum exterius superius ; fig. 3, perigonii phyllum interius laterale ; fig. 4, labellum cum carina, a latere visum ; fig. 5, anthera a latere visa ; fig. 6, eadem a fronte ; fig. 7, capsula, magn. nat. ; fig. 8, semen, arillo remoto.

Tab. IX.—*Hapaline Benthamiana*.—Fig. A, planta, magn. nat. ; fig. 1, spadix ; fig. 2, ovarium ; fig. 3, sectio verticalis fructus, semen immaturum exhibens ; fig. 4, squama staminalis antheras gerens, a latere interiore visa.

Tab. X.—*Stemona Griffithiana*.—Fig. A, planta florens ; fig. B, caulis foliati pars superior ; fig. C, racemus fructiger ; fig. 1, perigonii phylla 2 cum stamine ; fig. 2, semen cum arillo, latere visum ; fig. 3, capsula aperta, semina exhibens ; figuræ omnes magn. nat.

Errores graviores in parte priori (J. A. S. B., vol. XLI, pt. II), corrigendi.

Page 311. lin. 6. infra pro *apicibus* lege *apices*.

Pag. 312. lin. 10. supra pro *pomini majoris magnitudine* lege *pomi minoris magnitudine, brunneo-velutinæ*.

NOTES ON SOME SPECIES OF MALAYAN AMPHIBIA AND REPTILIA,—  
by DR. F. STOLICZKA.

(Received 15th Feb. 1872; read 5th March, 1872.)

[With plate XI.]

It is nearly three years ago that I had the pleasure of submitting to the Society a few notes on Indo-Malayan Reptiles and Amphibians, chiefly collected by myself along the Burmese and Tenasserim coasts, about Penang and on the Nicobar and Andaman islands. When visiting Penang in 1869, I received information of a tolerably extensive\* collection of Reptiles, brought together by a zealous Jesuit during a residence of about twenty years on the island. The specimens were collected either on Penang itself or on the opposite coast of the Wellesley Province. A very large number had been captured alive, and coloured drawings, taken from most of the live specimens, had been prepared. The colouring appeared to me to have been faithfully copied, and this it was which particularly excited my interest in the collection, because in many cases the colours of Reptiles fade most rapidly, as soon as the specimens are placed in spirit; in others the colouring changes immediately after death, and again some alter even during life their colour, as soon as they become conscious of their captivity. In any case the coloured sketches from life seemed to me valuable and I, therefore, resolved to buy the collection.

As soon as the formal matters were arranged, the collection of the specimens was transmitted to me, the drawings, however, were afterwards not considered to form an essential part of it, and were handed over to some one else, according to a wish of the deceased gentleman under whose supervision they were executed. After a brief correspondence it did not appear to me much use treating further about the subject. My interest in the collection has, on that account naturally enough, partly diminished, and having had other more pressing work to attend to, the specimens were for more than two years left unnoticed. More recently my friend Mr. Stahlknecht of Singapore visited Sumatra, and made for me a very nice little collection of Reptiles, most of which were in a beautiful state of preservation. This circumstance induced me to look over my old acquaintances, and to prepare a critical list of all of them. In the old collection I only found two new species, a *Rana* and a *Simotes*, a specimen of the latter had very recently been also obtained by Mr. J. Wood-Mason's collector at Lahore, situated at the extreme south end of the Malayan Peninsula, north of Singapore island. Mr. Stahlknecht's collection yielded a new *Calamaria*.

\* This refers to the number of specimens, but not to that of species, as I subsequently discovered.

Thus, although I cannot say, that I came into possession of a great number of new forms, there are among those, which I shall place on record, a few rare and very interesting species, some of which were previously known only from single specimens, and these often were not very perfect. I may mention for instance *Draco quinquefasciatus*, *Podophis chalcides*, *Ophites subcinctus* and *albofuscus*, *Ablabes flaviceps*, *Oxycalamus longiceps*, &c.

I shall first enumerate all the species, and attach an (\*) asterisk to those, about which I shall have to say a few words.

The collection was made, as I said, to a large extent on Penang itself or in the Wellesley Province, and judging from the examination of it, I have found no reason to doubt in any way this statement. A great many of the same species had been collected by myself in that part of the country on a former occasion, others were known to occur there from the very elaborate and extensive researches of Dr. Cantor; others again had been recorded from Malacca, Singapore, Sumatra or Java, all countries which belong to the same zoological province, and which have a large number of species common. I have not met with a single instance which would lead me to suspect, that any mixture of other distant localities had taken place. Thus the present list in connection with that of Drs. Cantor, Gray and Günther, and my own published in 1870, may be considered as fairly completing the number of Reptiles and Amphibians, inhabiting Penang and the neighbouring Wellesley Province. Mr. Stahlknecht's specimens are from the neighbourhood of Dilli on Sumatra. In the general list I shall briefly note the localities as *Penang* and *Sumatra*.

#### BATRACHIA.†

1. *Rana tigrina*, var. *pantherina*, Fitz. apud Steindachner. (Novara Amphibiens).—*Penang*.
- 2.\* „ *fusca*, Blyth.—*Penang*.
3. „ *lymnocharis*, Boie (= *gracilis*, Wiegman.); typical.—*Penang*.
- 4.\* „ *lymnocharis*, var. *pulla*, Stol.—*Penang*.
- 5.\* „ *plicatella*, n. sp.—*Penang*.
6. *Polypedates maculatus*.—*Penang*.
7. „ *quadrilineatus*.—*Penang* and *Sumatra*.
8. *Hylarana erythraea*.—*Penang* and *Sumatra*.  
Comp. Proceed. A. S. B. for June, 1872, p. 104. The largest specimen measures: body 3 inch, hind limb 5 inch.
9. *Bufo melanostictus*.—*Penang*.

† If no special reference to literature is given, it is understood that the species is described in Dr. Günther's Reptiles of Brit. India, or in my former paper on Malayan Reptiles in Journal A. S. B. vol. xxxix, pt. II.



10. *Bufo asper*.—*Penang*.  
Largest specimen, body 5·5 inch. long.
11. *Epicrium glutinosum*.—*Penang*.

## SAURIA.

12. *Euprepes carinatus*, Schneid., = *rufescens*.—*Penang* and *Sumatra*.  
All have a rufescent bronzy tinge and dorso-lateral pale bands.
- 13.\* *E. olivaceus*.—*Penang* and *Sumatra*.
14. *Riopa albopunctata*.—*Penang*.  
Exactly the same as in Bengal.
15. *Podophis chalcides*.—*Sumatra*.
- 16.\* *Gymnodactylus* (? *Cyrtodactylus*) *pulchellus*.—*Penang*.
17. *Cyrtodactylus affinis*.—*Penang*.
- Comp. J. A. S. B. vol. xxxix, pt. II, 1870, p. 167.
18. *Peripia mutilata*, Wieg., = *Peronii*, D. and B., teste Peters et Günther.—*Penang* and *Sumatra*.
19. *Heimidactylus frenatus*.—*Sumatra*.
20. *Nycteridium platyurus*, Schneid. = *Schneideri*.—*Penang* and *Sumatra*, very common.  
All have less dark coloration than Himalayan or Khasi hill specimens, but are in other respects not distinguishable, Comp. J. A. S. B. xl, pt. II, p. 103.
21. *Geecko guttatus*.—*Penang*.
22. „ *stentor*.—*Penang*.
23. *Ptychozoon homalocephalum*.—*Penang* and *Sumatra*.
24. *Bronhocela cristatella*, Kuhl.—*Sumatra*, very common.  
All have 36 to 42 small equal scales in a lateral row.
25. *Draco volans*, Linn.—*Penang* and *Sumatra*, very common.
- 26.\* „ *quinquefasciatus*.—*Penang*.
- 27.\* „ *fimbriatus*.—*Penang*.
28. *Hydrosaurus salvator*.—*Penang* and *Sumatra*.

The light spots and bands are in young and in old males [at least] bright yellow, not white. The species is also very common on all the Nicobar and Andaman islands.

29. *Crocodilus porosus*.†—*Penang*.

† The similarity of form and colour of the young of this species with equally large specimens of *C. Pondichermanus*, Günther, is very striking. My collector recently brought several young specimens (12-14 inches) of the latter species from Arrakan, and when compared with equally large specimens of *porosus*, the former all have the snout, and also the tail, conspicuously shorter; all have only six rows of shields on the back, but there is an additional one on either external edge broken up into single shields. In *porosus* the outer row of shields on either side is complete, or continuous, and on the whole the dorsal shields appear to be smaller. In every other respect the young of both species are identical. I have not seen an adult of *Pondichermanus*, but it ought to be looked for in Arrakan. Both have a small shield on either anterior side of the

## OPIIDIA.

30. *Typhlops nigroalbus*.—Penang.
31.     "    *braminus*.—Penang.
32. *Cylindrophis rufus*.—Penang.
- 33.\* *Calamaria Stahlknechti*, n. sp.—Sumatra.
- 34.\* *Oxycalamus longiceps*.—Penang.
- 35.\* *Simotes bicatenatus*.—Sumatra and Penang.
- 36.\*     "    *cruentatus*, Theob.—Penang.
- 37.\*     "    *catenifer*, n. sp.—Penang and Jahore.
- 38.\* *Cyclophis tricolor*.—Sumatra.
- 39.\* *Ablabes flaviceps*, Günth.—Sumatra.
40. *Composoma (Elaphis) melanurum*.—Penang.
41.     "    *radiatum*.—Penang.
42. *Ptyas korros*.—Penang.
43.     "    *hexagonotus*, (Cant.).—Penang.
44. *Tropidonotus quincunciatus*.—Penang.
45.     "    *trianguligerus*, Schleg.—Penang.
46.     "    *vittatus*.—Penang. (Günther's Colub. Snakes).
- 47.\* *Gonyosoma oxycephalum*.—Penang.
- 48.\* *Dendrophis caudolineatus*, Gray.—Penang and Sumatra.
49.     "    *pictus*.—Penang and Sumatra.
50. *Tragops prasinus*.—Penang and Sumatra.
51. *Dipsas cynodon*.—Penang.
52.     "    *Drapiezii*.—Sumatra. (Comp. Schlegel's Abbildungen).
53.     "    *dendrophila*.—Penang.
54. *Chrysopelea ornata*.—Penang and Sumatra.
55.     "    *rubescens*.—Penang and Sumatra.

neck, it being a rudiment, or rather probably the beginning, of the anterior nuchal plates.

Besides *C. Pondicherianus*, my collector brought among others the following species which I do not think had been previously recorded from Arrakau.

*Callula pulchra*.

*Diploelma curvaticum* and *D. Bermorei*.

*Polypedates maculatus* and *P. quadrilineatus*.

*Hylarana erythraea* and *H. Tytleri*. Both quite distinct species.

*Riopa lineolata*.

*Tachydromus seolineatus*.

*Hemidactylus (Doryura) Bermorei*.

*Hinulia maculata*. Also common on all the Andaman and Nicobar islands.

*Lycodon aulicus*, (black variety).

56. *Psammodynastes pulverulentus*.—Penang.  
 57. " *pictus*.—Sumatra.  
 (Colub. Snakes, p. 251). Exactly agreeing with Günther's description.  
 58. *Lycodon aulicus*.—Penang.  
 59.\* *Ophites subcinctus*.—Sumatra.  
 60.\* " *albofuscus*.—Sumatra.  
 61. *Bungarus fuscatus*.—Penang.  
 62. *Adeniophis*\* (*Callophis*) *intestinalis*.—Penang.  
 " " *bivirgatus*.—Penang and Sumatra.  
 63. *Xenopeltis unicolor*.—Sumatra.  
 64. *Python reticulatus*.—Penang.  
 65. *Hypsirhina enhydris*.—Penang.  
 All specimens have an almost continuous dark line along the middle of the lower side.  
 66. *Hypsirhina plumbea*. (Very variable).—Penang.  
 67.\* " [*Ferania*] *alternans*.—Sumatra.  
 68. *Fordonia unicolor*.—Sumatra.  
 (The young are brownish olive with numerous dark dots).  
 69. *Cerberus rhynchops*.—Penang.  
 70. *Homalopsis bucata*.—Penang.  
 71. *Hipistes hydrinus*.—Penang.  
 72. *Hydrophis robustus*.—Sumatra.  
 73.\* *Trimeresurus Wagleri*.—Penang and Sumatra.  
 74. " *erythrurus*.—Penang.

#### RANA FUSCA.

Comp. Anderson in P. Z. S. for 1871, p. 197.

Rufous brown above, with a pale longitudinal dorsal streak, broad in front, narrow towards the posterior end; limbs above somewhat indistinctly variegated and banded with darker brown, posterior side of femora with closer and darker variegations. Lower side uniform whitish, except a few dark spots on the lower lip, but the front-end of the lower lip has a conspicuous white spot, as stated by Blyth.

The nostrils are much nearer the snout than the eye; the tympanum is smaller than the eye, but quite distinct in a nearly full grown specimen; skin above and at the sides of the belly with few scattered slightly enlarged tubercles; lower side perfectly smooth. The first and second fingers are slightly shorter than the third and fourth respectively; the second is shortest. The metatarsus has a single, inner, marginal, elongated tubercle. The first and fifth toes are fringed externally, but the tarsus has no fold. The toes are entirely webbed and their tips very distinctly swollen.

The length of the body equals the distance from the vent to half the length of the tarsus.

\* See Peters in Monatsb. Berlin Akad., 1871, p. 579.

*RANA LYMNOCHARIS, var. PULLA.*

Comp. Stoliczka, Journ. A. S. B. vol. xxxix. pt. II, 1870, p. 144.

Since the publication of my notes on this variety I have received two other specimens from Penang. The form of the body, the teeth, the structure and general coloration exactly agree with typical *lymnocharis*, except that in one of the specimens the four dark bands on the upper side of the femora are well marked and somewhat narrower than in the other, in which the coloration is typical. In both, the lower lip is spotted and the chin variegated with dusky. Neither of the specimens has a dorsal pale streak.

One of them measures, body 1·35 inch., which is only one tenth less than the distance between the vent and the metatarsal tubercle, the total of the hind-limb being 2 inch., while in a specimen of typical (half-webbed) *lymnocharis* of which the body is also only 1·35 inch., the distance between vent and metatarsal tubercle is 1·15 inch, but the total hind-limb is 2·2 inch. Thus in *lymnocharis var. pulla* the metatarsal bones are longer and the fourth toe on the contrary much shorter than in typical *lymnocharis*. In the former also, as previously noticed, the toes are nearly fully webbed, the web reaching to very near the tip of the third and fifth toes, but only to the base of the penultimate joint of the fourth toe.

The other specimen has the length of the body 1·3 inches, which is equal to the distance between the vent and the heel, and the total hind-limb is 2·17; thus very nearly equal to that of *lymnocharis*, only differing from it by the fuller webbing, the web reaching fully to the middle of the penultimate joint of the fourth toe. In this specimen also the tips of the toes are all remarkably swollen. All other characters are exactly as in typical *lymnocharis*.

These variations appear to me to indicate that they are progressive or undergoing certain changes according to the requirements of the animal, and that we are, therefore, not entitled to give them a specific value, unless they become permanent. I look upon this longer-limbed, shorter-toed and fuller-webbed hill form of *lymnocharis* as a small (*pulla*) local variety, possessing certain peculiarities, in exactly the same manner as the Andaman and Nicobar variety of the same species. (Comp. l. c. p. 142 et seq., and Proc. A. S. B. for June 1872, p. 102).

*RANA PLICATELLA, n. sp. Pl. XI. Fig. 1.*

Body moderately stout with longish hind-limbs and swollen tips to the toes.

Head large, snout obtuse, with the canthi rostrales rounded; nostrils lateral, oval, somewhat directed upwards, nearer to the tip of the snout than to the eye; eye large, prominent, its longer diameter is slightly more than

the distance between it and the nostril, but it is equal to the width of the upper side between the eyes. Tympanum naked, as large as the eye. •

Head smooth above, hinder half of the eyelids tuberculated; body above with about eight longitudinal somewhat interrupted folds, with numerous small tubercles between them; limbs also smooth above, with the exception of the posterior halves of the tibiae, which are tubercular; chin in front with a few scattered, minute tubercles, a few others exist on the side of the belly, and the hinder part of the sacral region is densely studded with small plicated tubercles; the remainder of the under side is smooth.

The length of the body is very nearly equal to the distance between the vent and the middle of the tarsus; the fore limb is equal to the distance from the tympanum to the groin. The first finger is scarcely shorter than the third, the second and fourth are subequal. There is a slight fold on the inner lower edge of the tarsus, and one along the outer edge of the fifth toe. The tarsus has a single, inner, elongated, marginal tubercle. The toes are about three-quarter webbed, the web reaching on the fourth toe to scarcely beyond the base of the third-ultimate joint; on all the other toes it extends to the last joint, but it is deeply emarginate between all of them. The tips of all the toes are much swollen; the length of the fourth measured from the base of the tarsus is slightly less than half the length of the body.

Lower jaw with two fang-like projections directed inward. Tongue elongate, much broader towards the tip than at the base, terminating with two moderately sized projections. Vomerine teeth in two short oblique converging series. Sacral diapophyses not dilated.

Above, greenish brown, with a dark band from the nostril through the eye, continuing behind it; limbs with numerous transverse dark bands; they are somewhat ill-defined on the upper arm, on the lower arm there are three or four very short ones, six on the femur, five somewhat more distant ones on each tibia, three on the tarsus, one on metatarsus and a few more on the outer-side of the toes. The hinder sides of the femora are densely and rather minutely variegated with dark brown; a horse-shoe shaped yellow mark, open below, round the anus; folds on the tarsus and outer toe also yellowish; lips indistinctly variegated with pale and dusky; lower side uniform white, except on the tibiae, and on the feet, which are speckled with dark.

The only species which in some respects resembles the present form is *Rana porosissima*, Steindachner, from Angola (Novara Amphibiens, p. 18, pl. I, figs. 9-13), but it differs in the coloration of the limbs, in the smaller size of the tympanum, smaller vomerine ridges of teeth, in having the apophyses on the lower jaw scarcely enlarged, the tips of the toes not swollen &c.

## EUPREPES OLIVACEUS.

The young (body 1 to 1·5 and tail 1·5 to 2 inches) are very differently coloured from the old. The snout and headshields are olivaceous, the posterior edges of all the shields being blackish; the whole body and limbs are blackish brown, with numerous rather close, transverse, greenish white or yellow stripes; tail and the entire lower side yellowish white, or quite yellow. In the adolescent and some old ones the pale transverse bands exist as remnants in the shape of transverse series of spots, but most adults become entirely olivaceous, with only the edges of the eyelids bright yellow.

## GYMNODACTYLUS PULCHELLUS.

In the descriptions of this species it is usually stated that there are six dark, white edged bands across the body, but properly speaking the sixth band is situated on the base of the tail. Further, it is stated that a fold of the skin exists along the side of the body. This is in reality not the case, at least not in live specimens, but the shield-like scales of the lower side are separated from the granular upper surface by a row of conspicuously enlarged granular scales; this row becomes strongly prominent in spirit specimens, and gives the appearance of a fold.

As regards the position of the femoral pores the species is intermediate between *Cyrtodactylus* and *Gymnodactylus*, the pores lying first in a longitudinal fold and then extending flatly on the femora. This instance shews that *Cyrtodactylus*, (as likewise the present species), should be looked upon merely as a section of *Gymnodactylus*.

## DRACO QUINQUEFASCIATUS.

A single male specimen measures: head and body 3·5 inch, tail imperfect, apparently about 5 inches. The hind limb is contained 1·33 times in the distance between it and the fore limb, the latter being somewhat shorter than the former. There are no enlarged tubercles on the head, but only a number of interspersed, slightly larger white scales at the sides of the neck, and a broad band of closer set ones across the occiput. The scales on the anterior part of the back are obsoletely keeled, on the posterior part they are perfectly smooth. On the wings scales are present along all the ribs, and in numerous longitudinal series on the basal half of the alar skin, while further on their number greatly diminishes, except again at the outer margin.

The specimen has only a very slight indication of a crest on the neck; the gular sack is very long and lanceolate, a dark band running at its posterior base across the lower neck. Chin dark spotted, like the body; tail also spotted at its base, but further on with brown bands. In all other respects the specimen agrees with Gray's characteristic description.

## DRACO FIMBRIATUS.

Dumeril and Bibron, vol. iv, p. 448.—Gray, *Lizards*, p. 234.

A specimen from Penang exactly agrees with the one figured by Gray and Hardwicke in *Illustr. of Indian Zoology* as *D. abbreviatus* from Singapore. The scales of the back are very small and almost quite smooth, with a series of larger ones on either side at the base of each wing. Günther (*Rept. Brit. India*, p. 123) says that no orbital or rather post-orbital, spine exists. This is a mistake, at least as far as male specimens are concerned. In these there are two very distinct post-orbital spines; they are well shewn in Gray and Hardwicke's figure. Dumeril and Bibron's minute description of the headshields from Javanese specimens also appears exactly to correspond with the structure of Singapore and Penang specimens.

General colour bronze brown; head, not including the nape, a zigzag undulating slightly variegated band across the neck, another across the shoulders, a third between the hind limbs, and a fourth, though less distinct one, across the middle of the body, pale bluish, a bluish black spot between the eyes; on the body are four irregular marks, each composed of a few blackish lines, and each enclosing along the middle of the back a somewhat elongated diamond-shaped figure.

Limbs with cross dark stripes, and bluish edges to all the front and hind sides. Wings above blackish with radiating bluish lines, below pale with a few scattered black spots. Tail banded with bronze and pale bluish. Chin variegated with dark; gular pouch tinged with blue and red, dusky at the base. Body below uniform yellowish white, with scattered bluish dusky spots, mostly conspicuous along the sides.

## CALAMARIA STAHLKNECHTI, n. sp. Pl. XI. Fig. 2.

Body long, cylindrical, snout somewhat narrowly obtuse; total length 13·5 inches, of which the tail is 1·2 inch; rostral reaching to the upper surface of the head; frontals anteriorly narrower than posteriorly, laterally bent down, and in contact with first and second labials, the nasal being very small; occipital six-sided, with the anterior angle shorter and more obtuse than the posterior one, it is smaller than one occipital; each of the latter has an obtuse angle in front and behind, and both form an inwardly directed angle along the suture on either end; one præ- and one post-ocular; five upper labials, the third and fourth touch the orbit, the fifth is largest, in contact with the post-ocular and occipital; it is followed by a moderately sized shield which has quite the appearance of a sixth labial, and indeed the gape partially extends below this quasi-sixth labial; above this last extends a long temporal. Mental shield small; five lower labials; the first pair is the smallest, separated from each other, the fifth the largest. The first pair of chin-shields is largest, each being in contact with three labials and having a very

obtuse angle behind ; the shields of the second pair are only about half the size of the first, entirely separated from each other by two scale-like shields following each other, and by two other somewhat larger shields from the first very large ventral. Scales smooth, in thirteen rows ; ventrals 163, anal entire, subcaudals 22, the last single occupying the shortly pointed end of the tail.

Uniform iridescent brownish black above, the two outer series of scales on either side mostly white ; upper labials spotted with yellow, the fifth labial being almost entirely yellow. Lower side, beginning a short distance from the throat, with two or sometimes three ventral shields alternately yellowish white and black, the black colour encroaching laterally upwards upon the yellowish white lateral bands, and being longitudinally connected along the edges of the ventrals and subcaudals ; the latter have besides an interrupted blackish line along the middle, and the pale colour is tinged with vermilion. Possibly the red colour extended over the whole of the light coloration during the life of the snake.

The only specimen examined was sent to me with several other species by my friend Mr. Stahlknecht of Singapore ; he collected the same near Dilli on Sumatra.

In general aspect the species resembles *C. Linnaei*, but differs essentially in several points of its structure. It also does not agree with any of the species more recently described by Bleeker and Edeling, or figured by Ján.

#### OXYCALAMUS LONGICEPS.

A single specimen of this rare snake was in the Penang collection ; it measures seven inches of which the tail is one.

The following may be added to Cantor's and Günther's descriptions :

The rostral shield is of moderate size, reaching with its angle to the upper surface of the head ; anterior frontals small, each about one-third the size of a posterior ; the suture separating the two anterior frontals is only two-fifths of the length of the suture between the posterior frontals ; vertical six sided, the sides touching the supraciliaries being parallel to each other ; one supraciliary not quite as wide as half the width of the vertical ; occipitals nearly double the length of the vertical, reaching down on either side to the postocular ; nasal in a *single* shield.

Vent. 137, anal entire, subcaudals 29.

Uniform iridescent black above and below, many of the ventrals and subcaudals with paler posterior edges ; a pale yellowish spot on the fifth upper labial and a second one on each side of the throat.

#### SIMOTES BICATENATUS.

In several specimens, the dark dorsal band is divided by a pale reddish



line. A young specimen has only one præocular, and only the upper smaller temporal is in contact with the postoculars.

#### SIMOTES CRUENTATUS.

Comp. Proceed A. S. B. for August, 1872, p. 145.

This species agrees in general aspect and coloration with *S. bicatenatus*, but it has only seventeen rows of scales. One specimen in the collection has a small portion of a labial detached, forming a second (lower) præocular; it has very few dark blotches on the anterior ventrals; only two black spots on the tail, one at the root, the other near the tip.

#### SIMOTES CATENIFER, n. sp. Pl. XI. Fig. 3.

The body is short, stout, moderately compressed, the head large, conspicuously truncate in front.

Rostral shield well reaching to the upper surface of the head; anterior frontals considerably smaller than the posterior ones, both bent down at the sides; superciliaries narrower anteriorly than posteriorly; vertical large, six-sided, with a very obtuse angle in front, somewhat converging sides, and with nearly a right angle behind; one occipital is about the same size as the vertical, each reaches down to the superior postocular and is rather broadly truncate behind. Nostril between an anterior large and a posterior somewhat smaller shield; loreal squarish; two præ-oculars, the upper is long, while the lower has the appearance of being only a small detached portion of the fourth labial; two postoculars; temporals 1 + 2 + pl., the last is somewhat irregular and scale-like, the first obliquely in contact with both postoculars. Eight, rarely nine, upper labials, the fourth and fifth under the orbit, sometimes a small portion of the fourth is detached, touching the orbit as a separate shield. Mental shield small; nine lower labials, those of the first pair form a suture; anterior pair of chin-shields largest, each in contact with four labials; second pair much smaller, and separated by other two somewhat smaller pairs following each other from the first ventral. Scales smooth, in nineteen rows; ventrals 178 to 205, distinctly angular at the sides; anal entire, moderately enlarged; subcaudals bifid, in 57 pairs.

The general coloration of the upper side is sandy brownish; head with the usual dark brown markings; the first band crosses the eyes and reaches forward to the rostral; the second ascends across the angles of the mouth to the outer median edge of the occipitals; the third is thick, arrow-shaped, anteriorly prolonged to between the eyes. Body with twelve or thirteen dark cross bands, each composed of four confluent spots, the two dorsal ones being larger and darker; tail with four or five cross bands. Between each two of these bands the scales, following alternately each other, are partially blackish, forming three undulating cross lines in each interspace. The sides

along the ventrals are checkered with blackish brown; lower labials with their hinder edges blackish. Lower side dusky yellowish, tinged with red which passes into vermilion on the posterior half; every second or third ventral has a quadrangular black spot at each of the outer edges, the interposed edges being white, and the spots are somewhat more distant on the ventrals than on the caudals.

The total length (in two specimens) is 9·5 inch., the tail being 1·75. I have received one specimen from Penang and Mr. Wood-Mason lately obtained a second one from Jahore, North of Singapore.

This is the fourth species of a small group of *Simotes*, all of which are closely allied to each other and all belong to the Malay or Chinese fauna: they agree in their small size, short and stout body, in the form of the head-shields and in coloration. *S. Cochinchinensis*, Günther, has twenty-one rows of scales round the body. *S. brevicauda*, Steindachner, (Novara Rept. p. 61, pl. iii, figs. 13—14) has, like *catenifer*, nineteen rows of scales, but the occipitals and oculars are in the former somewhat differently shaped, the markings on the head are also somewhat different, and there are no lateral spots on the ventrals; in every other respect both species almost perfectly agree, as far as I can judge from the figure and description, and if I had not obtained two perfectly like specimens of *catenifer* from different localities, I would have hardly ventured to separate them as distinct. The fourth species is Ján's *S. ancoralis*, which has the black spots on the edges of the ventrals, but only seventeen rows of scales round the body and only one præ-ocular.

#### CYCLOPHIS TRICOLOR.

Schlegel, *Phys. Serp.* II, p. 187, pl. vii, figs. 16—18; *idem*, Dum. and Bibr.; Günther; Ján, *Oph. Livr.* 31, pl. vi, fig. 2.

One specimen measures 18·5 inches, of which the tail is 7 inch. Scales smooth, in fifteen rows, vent. 144, anal bifid, subcaudals 129. Greyish, or rather olivaceous, brown above, yellowish white below, a black streak from the nasal through the eye to the side of the neck, rapidly disappearing on the anterior part of the body. Each six-sided scale, above, has the anterior lateral margins pale, producing longitudinal zigzag pale lines; upper labials yellow; along the edges of the ventrals and sub-caudals runs an indistinct dusky line, and another interrupted one along the middle of the ventrals, these lines begin to appear a short distance from the neck, which is below and at the sides uniform yellowish.

The fine zigzag pale lines of the upper side are indicated in Ján's figure. Both in structure and coloration the Sumatra specimen agrees with Schlegel's figure and description, except that the head is a little more slender. This specimen had a large spider in the stomach. Schlegel's snake was

from Java and the species has, I think, not yet been recorded from anywhere else.

*ABLATES FLAVICEPS*, (*var.*), Günther.

Ann. and Mag. Nat. Hist. vol. XVIII, 1866, p. 26, pl. vi, fig. B.

One specimen agrees well with Günther's description and figure of this snake, but it has nine upper labials, the second being replaced by two, so that the 4th, 5th and 6th labials enter the orbit. The hinder chin-shields are almost in immediate contact with the first well marked ventral. Total length 16·7 inch., of which the tail is 5·5 inch., being somewhat obtuse at the end; scales in 17 rows, one præ- and one or two post-oculars, 150 ventrals, anal bifid, 70 subcaudals.

Head yellow, somewhat tinged with brown in front, a straight black streak through the eye and a white one along the upper labials. The general colour of the upper side is brown, powdered with grey; a light blue band begins on each side of the neck, continuing on each side of the back, the colour gradually turning to grey, but both bands remain tolerably distinct to the tip of the tail. On the front part of the body each is marked with squarish black spots along the inner edge, further on the spots become smaller, alternate in position on the two sides, but are somewhat removed from the internal margins towards the middle line. Below, yellowish, all the ventrals, (except those on the neck), with narrow blackish hind edges about the middle of the body, almost meeting in the centre, but further on the black becomes more confined to the outer margins, and on the subcaudals it forms a serrated black band on either side, as in *Ablates melanocephalus*, to which the present species bears a very strong resemblance. Dr. Günther mentions in his specimen only the presence of a black spot on either side of the ventrals.

*GONYOSOMA OXYCEPHALUM*.

A very large specimen, measuring about five feet, has the scales round the body in 27 series; it is sea-green, the tail strongly tinged with rufescent brown, the sutures of the scales being blackish; the dark streak on the side of the head is very indistinct; upper labials whitish green.

*DENDROPHIS CAUDOLINEATUS*.

Dr. Günther when noticing my paper on Penang Reptiles in the Zool. Record for 1870, says that I described his *D. caudolineolatus* (from Ceylon), as *D. caudolineatus* of Gray. I should have hardly expected such a brief dismissal of the consideration of all other points connected with the identification of this species. Dr. Günther appears to have noticed merely my statement regarding the thirteen rows of scales round the body, and to this one charac-

ter he seems to have sacrificed everything else. Now the Penang species, of which I lately also received four beautifully preserved specimens from Sumatra, has only *thirteen rows of scales*. Cantor's description of the snake is admirable, and he gives also thirteen rows of scales. Dumeril and Bibron, when describing their *D. octolineatus*, also speak of only thirteen rows, and Ján (Ophid. Livr. 31, pl. II,) gives the same number of scales when figuring the species under Dum. and Bibron's name.

Thus the question to be determined is, whether Gray's type has thirteen or fifteen rows of scales round the body? If fifteen rows are present, we have to see whether we are entitled to regard this number as a normal or abnormal one in that particular specimen, that is, whether other specimens from the same locality have 13 or 15 rows of scales; for as far as other points of structure and coloration go, the Penang and Sumatra species is absolutely identical with Gray's *caudolineatus*. I have no Bornean specimens for comparison, so I can add nothing more towards the solution of the question.

The Ceylonese *D. caudolineolatus*, as far I can judge from the description and figure of it, differs in the structure of the præ-ocular, in the upper labials, and so very essentially in coloration, that I could not have thought of identifying the Penang *caudolineatus* with it.

#### OPHITES SUBCINCTUS.

One specimen measures eighteen inches, of which the tail is 3·25 inch. The general colour of the upper surface is black, slightly duller at the sides, dull olivaceous blackish below; front head above blackish brown; seventeen broad white rings round the body, the first on the neck, and four on the tail; the white of the rings is considerably more distinct on the anterior than on the posterior part of the body. The eight median rows of scales on the back are keeled; eight upper labials, regular on both sides.

#### OPHITES ALBOFUSCUS.

A remarkably slender snake, measuring 18·75 inches, of which the tail is 5·75 inch. It has seventeen rows of scales, all strongly keeled, the keels on the back being finely crenulated. The general structure exactly agrees with Günther's account of the species. The specimen has 241 ventrals, anal bifid, and 178 subcaudals, the last shield is single, very long and cylindrical.

The general colour is dark brown above, olivaceous white below; hind head and collar on neck very slightly olivaceous white tinged with yellow; body with twenty-six transverse white cross bands, some are imperfect, the intermediate brown bands of ground colour being first thrice, afterwards only twice as broad as the white ones. Tail with about twenty-six transverse white bands, several of them succeeding each other being often

confluent along the middle line, and all are about equally broad as the brown bands separating them; towards the tip of the tail the light coloration prevails and almost entirely suppresses the dark one.

Mr. Stahlknecht obtained only a single specimen near Dilli on Sumatra. Dumeril and Bibron also described a specimen from Sumatra; another one is reported by Dr. Günther as having been brought from Malabar, but as it was bought from a dealer, the locality is not considered reliable.

#### HIPSIRHINA [FERANIA] ALTERNANS, Reuss.

*Eurostus alternans*, apud Dum. and Bib., Herp. Gen., VII, p. 957.

*Homalopsis decussata*, Schlegel.—*Hipsirhina alternans* apud Ján, Ophid., Livr. 30 pl. vi, figs. 1 and 2.

One specimen measures: total length 8.25 inches, the tail being one inch. It has two anterior frontals, the first scarcely half as large as the posterior, vertical six-sided, much smaller than one occipital; one loreal, one præ-ocular, two post-oculars; seven upper labials, the fourth under the orbit; the two first lower labials are in contact; two pairs of chin-shields, the first forms a suture, the shields of the second pair are much smaller, diverging and with their upper pointed ends lying between the first chin-shields and the labials. There are twenty-six rows of scales immediately behind the head, twenty-two round the neck, below interrupted by the second ventral, and nineteen round the middle of the body, ventrals 157, anal bifid, subcaudals thirty-four, the first five entire, the last conical.

General colour brown; head, above, anteriorly with a few pale spots; back with narrow pale (yellowish) cross bands: the first passes over the hind-edges of the occipitals and is laterally bipartite, the next four are simple and complete, the following after these mostly interrupted along the centre, and after the middle of the body the bands become reduced to indistinct lateral spots. The sides of the body are marked with a series of pale yellow cross-bars, more than one scale broad, and are separated by equally broad bands of the general brown coloration; the lateral pale bands more or less encroach upon the ventrals, but the general colour of these latter is pale brown. Chin and upper labials spotted with yellow.

This coloration slightly differs in minor details from that given by Ján, but it agrees with it in all essential points.

The larger size of the occipitals as compared with the vertical, the smaller number of upper labials and of the scales round the middle of the body, and the coloration readily distinguish the present species from *F. Sieboldi*.\*

\* Günther, in Ann. and Mag. N. H., 1866, xviii, p. 28 and in Zool. Rec. for 1868 says, that Ján figured *F. Sieboldi* as *Hypsirhina Bocourti* (Iconograph. Livr. 28, pl. v, fig. 2). Ján's *H. Bocourti* has apparently only 23 or 25 rows of scales round the body,

## TRIMERESURUS WAGLERI.

Fresh specimens are black above, with numerous spots on top of head, the superciliary edges, both lips, numerous narrow cross bands and the whole of the lower side bright golden yellow with a greenish reflection during life; the stripe from the nostril to below the eye, continuing above the angle of the mouth, one stripe on each side along the margins of the labials, and all the other light spots on the back, but particularly at the sides, are sea-green, more or less tinged with yellow.

NOTES ON THE INDIAN SPECIES OF THELYPHONUS,  
by DR. F. STOLICZKA.

(Received 23rd February, 1873, read 5th March, 1873.)

[With plate XII.]

Towards the end of last year, a monograph of the genus *Thelyphonus* appeared in the September number of the Annals and Magazine of Natural History. The author of the paper, Mr. A. G. Butler, seems to have sifted well the materials of the national collection in the British Museum, but whether he has succeeded in his determinations of known, described and figured, species, is a question on which I may be permitted to say a few words. I will not unnecessarily transgress the field of my observations, and will chiefly confine my remarks to the Indian representatives of the genus.

I had for some little time devoted attention to these Arachnoids, and it has been my intention to publish a detailed monograph of the Indian *Thelyphoni*, together with an account of their anatomy,\* notes on their habits, propagation, development, etc., all points about which our present knowledge is as yet very imperfect. Unfortunately, I have just at the present neither the time nor the materials which would justify me to treat satisfactorily with this subject, and I must leave it, therefore, for a subsequent communication. One of the chief objects of the accompanying notes is to draw the attention to certain discrepancies, or perhaps insufficiencies, in Mr. Butler's determinations of a few of the Indian *Thelyphoni*.

the coloration is somewhat similar to that of *F. alternans*, the occipitals are much longer than the vertical, and there is only one anterior frontal, this, however, is also said to exist in an old specimen of *Sieboldi* from Siam. Still I am not certain that Günther's suggested identity of the two snakes will be confirmed.

Ján does not acknowledge the distinctness of *Ferania* from *Hipsirhina*, and if *F. Sieboldi* has occasionally only one anterior frontal, the principal reason for keeping the two genera as distinct no doubt loses its validity.

\* As compared with that of the Scorpions.

Lucas' account of the external anatomy of *Thelyphonus* is the only reliable one which we as yet possess. Short as it is, it clearly points out the great relation of the genus to *Phrynus*, and its essential difference from the scorpions.

As regards general distribution, I may say, that on the whole, particularly when compared with scorpions, the *Thelyphoni* are rare. I have only observed two life species, *T. scabrinus* and *T. (conf.) angustus*. Both were found at the foot of the Sikkim hills in damp places under the bark of old trees. They are crepuscular or nocturnal animals. When disturbed during the day, they try rapidly to escape, slightly raising themselves on their feet, holding up the cheliceres ready for defence, and erecting their caudal seta. Thus they progress very fast and soon disappear in any crevice or hole to which they find easiest access. In the evening they progress very quietly, moving their antennular first pair of feet in advance. When disturbed they stretch out these feet in a curve, and close their cheliceres over the mouth as a kind of protection, lying at the same time quite flat and motionless. I saw *T. scabrinus* issuing a peculiar fluid from two internal piloric appendages on each side of the anus, but the fluid did not have any offensive odour.

Mr. Peal of Sibsagar (Assam), who is an able observer and is always ready to give assistance on any subject connected with natural history, writes to me also that the *Thelyphoni* are generally found underneath the bark of decayed wood in groups, rarely singly. When first uncovered they (generally) lie *perdu* and try to pass as some smudge or fungus; lying close and flat, the legs gathered well together and the cheliceres folded in and closed in front of the mouth. On being disturbed they generally start up, throw out and up their cheliceres, gaping wide, erect the tail and invert it so as to feel if possible any object above them; sometimes they throw it quite over between the cheliceres. The first pair of feet, he says, seems to act more as feelers than as organs of progression. These animals seem to move either very slowly or very fast. In raising any fragment offered, they hold it aloft and stand well upon their legs, at least for a time.

Mr. Butler proposed to group the *Thelyphoni* in three sections, according to the number of denticles on the upper antero-interior edge of the second joint of the cheliceres. This is apparently a character of great importance, but like all others it is not without variation. I found that the relative proportions of the joints, particularly of the second, third and fourth, are almost more constant than the denticles alluded to. The form of the large spine on the fourth joint, and in fact the total length and ornamentation of the surface of the cheliceres, and the proportionate length of the feet are at least equally important in distinguishing the species.

The next useful character lies in the form of the anterior part of the thorax, whether it is depressed or rounded, and whether the anterior and lateral eyes are connected by a ridge or not. Next in importance is the form of the first abdominal shield. The length of the tarsi on the first pair of feet is also tolerably constant, and so is the form of the mandibles, but these, as a rule, are difficult to examine.

All other characters relating to the form of the body have a comparatively limited value; the single parts are very uniformly constructed in the different species, and are at the same time very much liable to variation. Thus the width of the abdomen is very variable, (most likely according to the different sexes), and so is the length of the abdominal seta, as regards number and size of the separate joints, etc.

Turning now to the sections, distinguished by Mr. Butler, there are some discrepancies to be noticed in the species referred to them by the author. In the first section, with five denticles on the second joint of the cheliceres, we find among others:

*T. Brasilianus*. I count in Koch's original figure of the species at least seven, almost equal, denticles on the antero-interior edge. Their number, it is true, is not mentioned in the description, but if Koch's figure has been found to be incorrect, the correction should have been noticed. I am not aware that anybody has pointed out an inaccuracy in Koch's figure.

Guerin's *T. caudatus* (in his edition of the *Régne animale*) is identified with *T. Antillanus* of Koch. This is, I think, hardly admissible. Guérin's figure represents a species with comparatively shorter limbs and with the third joint of the cheliceres smooth on the upper surface and much longer, than a comparison of Koch's figure of *T. Antillanus* can bear out. The only reason for the identification of the two figures is, I think, Guérin's note that *T. caudatus* is from the Antilles, but whether that particular specimen was from the Antilles is an other question.

The identification of *T. Assamensis* with *T. rufimanus* of Lucas is entirely inadmissible, as I shall point out in detail further on (see p. 134).

*T. proscorpio* of Latreille is an altogether doubtful species, and even should Koch's definition of the presumed same species be adopted, there is no sufficient reason for considering it as identical with *T. caudatus* of Lucas. I shall refer to this question again in the description of *T. scabrinus* (see p. 133).

*T. Linganus*. Koch's original figure gives six denticles on the second joint of the cheliceres, but does not refer to that number in the text. Is the figure incorrect in that respect?

Koch's *T. rufipes* is clearly not the same species as the one originally described by Lucas under the same name. The cheliceres and the limbs are in proportion to the body much longer in the former than in the latter; and, besides that, Koch's species has a slight central keel on the upper side of the



abdominal segments, and on the lower side the first segment is centrally grooved; neither of these characters are mentioned by Lucas, though when describing the respective parts he could hardly have overlooked these prominent characters. I consider Koch's *rustipes* as the same which he describes under the name of *proscorpio*; for the differences which he notices as distinguishing the two are decidedly of no specific value.

In the second group with two denticles on the second joint of the cheliceres, Butler describes *T. formosus*. My specimen of evidently the same species has six denticles of which, however, only two are well marked.

In the third division, including species with six well developed denticles, one is referred to under the old name of *T. caudatus*. I shall attempt to trace the history of this name when speaking of *T. indicus*, (n. sp.), which is possibly the same species as the one referred to by Butler from Madras and Bengal under the name of *T. caudatus*.

In addition to the three sections, I have one species, *T. Beddomei*, from the Anamallies, with seven denticles on the upper edge of the second joint. Among the very large number of specimens of *T. scabrinus*, (n. sp.), I found instances in which the second left joint has occasionally six denticles, while the right one had constantly only five. This clearly shews that the sections solely based upon the character, selected by Mr. Butler, can have only a very limited use.

Thus far I have commented upon Mr. Butler's determinations, but it must be understood that in the above instances my observations are mainly based upon descriptions and figures; for I have no other but Indian specimens for comparison. If those descriptions and figures were found to be incorrect, or not reliable, the mistakes had first to be pointed out and corrected, before a determination, based upon them, was admitted or rejected.

Finally, before entering upon the specific details, I must briefly allude to the geographical distribution of the genus. This distribution extends from South America and the West Indies northwards to Mexico, in a westerly direction through the ocean of little islands to the Philippines, touching North Australia, and stretching North as far as Corea, China and through the Malay Peninsula to Burma and India, where we meet with most of the species in the provinces of Assam and Sikkim, more rarely in Bengal and in South India, including Ceylon, all countries which have a marked admixture of Malayan types. No species is known to occur westward of the country alluded to, not even in Eastern Africa, as far as we know at present. This distribution resembles in so many respects that of the *PASSALIDÆ*, that I shall again return to its discussion at an early opportunity.

The species which I have to notice from India, are :

1. *T. scabrinus*, n. sp.—Cachar, Khasi hills, Assam, Sikkim.
2. *T. Assamensis*, Stol.—Assam, Sikkim.
3. *T. (conf.) angustus*, Lucas.—Sikkim, Martaban (Moulmein), and Penang.
4. *T. formosus*, Butler.—Martaban (near Moulmein).
5. *T. indicus*, n. sp.—South India, W. Bengal, and Jahore, North of Singapore.
6. *T. Beddomei*, n. sp.—South India (Anamallies).

I will make my descriptions as complete\* as possible, and will not only give figures of single parts of the body, but also of the perfect specimens, in order to facilitate the determination by identification and not by guess. Figures of single parts are undoubtedly very useful, but they are not sufficient; they do not convey an exact idea of the relative proportions of all the parts of the body, and without paying due regard to these, a really reliable determination of *Thelyphoni* is in my opinion impossible.

1. *THELYPHONUS SCABRINUS*, n. sp. Pl. XII. Fig. 1.

*The whole upper surface granular; length† of the five terminal joints of the cheliceres equalling the length of the first eight abdominal segments; the length of last pair of feet equals exactly, or very nearly, the total length of the cephalothorax and abdomen; second joint of the cheliceres with five spines, third with a spine on the upper and lower inner edge, and equal in length to the fourth joint; a sharp upper ridge connecting the central and lateral eyes; first lower segment of abdomen of moderate size, depressed, with a broadly convex posterior edge.*

*Hab.*—Sikkim, Assam, Garo-, Khasi- and Cachar- hills.

The cephalothorax is slightly convex, with the anterior ocular portion somewhat higher, but on the whole depressed and flattened, roundly obtuse in front. The two anterior blackish eyes are separated by a moderately levated smooth tubercle; from its anterior edge proceeds a sharp ridge curving outward, and running along the upper edge to the three lateral eyes, which are pale yellow. The ocular portion is more densely and somewhat more coarsely granular than the thoracic one; the former has a longitudinal central groove,‡ and parallel to it an indistinct elevation on either side, placed nearer

\* I know that few would take the trouble of reading them on account of their length, but everybody, who has attempted to determine Arachnoids, will know that a description, unless fully detailed, is worthless for an accurate determination.

† This length is of course measured as far as the joints can be opened without disconnecting the articulation; it is not the aggregate length of the separate joints.

‡ I shall speak of this as the *cephalic groove*, and of the one on the posterior half of the cephalothorax as the *thoracic groove* and the *lateral thoracic depressions*.

to the margins ; the latter has also a longitudinal groove which is most depressed in the centre ; anteriorly from the central depression proceed two lateral grooves to the postocular depressions, and from the centre itself two on either side towards the margin. The sternum is triangular, obtuse in front.

The abdomen is moderately depressed, very elongately ovate, across the middle about one-twelfth of an inch broader than the thorax ; granular above, with the posterior segmental edges crenulated ; the muscular points\* are round and well marked on the second to eighth segment, the three last segments are mostly smooth, the last joint being roundly compressed towards the upper end, with a small vertical and elliptical gland on either side. Below, the first nine segments are finely scrobiculately punctated at the sides, and smooth along the centre ; the first joint is largest, equalling in length the three last ones, with the central portion of the posterior edge somewhat convexly produced ; the second joint is barely curved at the edge and the third, like the succeeding, quite straight. The muscular impressions are elongate and well marked on the fourth to seventh joints, but a little less distinct and more approximate on the first and second joints. The caudal seta very nearly equals in length the whole of the body, it is always peculiarly attenuated towards the end, and all the joints are more or less hairy. The length of the joints and their number is very variable ; the first is as usually the longest, the succeeding either gradually decrease in length, or some of them situated near the middle are longer than the rest.

The cheliceres may be regarded as of proportionate size to the body. The two first joints have each a strong spine in front, provided with a sharp joint and a small denticle on the inner side. The second joint has the upper side depressed, anteriorly moderately produced, with three small denticles on the inner edge, and two larger ones on the anterior one ; the outermost larger denticle is somewhat more distant from its preceding one, than any of the others from among each other, but all are directed forward and inward ; the inner concave side of this joint is coarsely granular, and the lower anterior corner has two denticles, of which the terminal one is the larger. The third joint on the upper side is equal in length to the second, and laterally along the middle to the fourth ; it always has a small denticle on the inner anterior corner, and a larger one in front of the middle of the lower edge. The anterior process of the fourth joint equals in length the fifth joint, it is depressed, smoothish, with a rapidly contracted sharp point and serrated edges, the posterior serration being slightly coarser

\* These points or depressions are very often called stigmatic points, but they have nothing in common with the stigmata, which lie under the edge of the first lower abdominal segment, and are not externally visible ; the depressions are merely places of the inner attachment of the muscular bundles which connect the upper chitinous integument with the lower one.

and beginning with two somewhat larger denticles at the base of the process; this fourth joint also has a minute denticle on the lower anterior corner. The fifth joint is invariably conspicuously shorter and thinner than the fourth, anteriorly with a strong depressed, sharply pointed process which is somewhat more coarsely serrated posteriorly than anteriorly; the lower anterior corner of this joint has two denticles, the anterior of which is somewhat stronger than the corresponding denticle of the preceding joint. The sixth joint, or movable claw, is somewhat longer than the process of the fifth, slightly inwardly curved, sharply pointed, above and below with a finely serrated edge, internally on the concave side with a smooth ridge, and two equally smooth ones are externally on the convex side.

The first pair of feet are thin; the terminal eight tarsal joints are shorter than the preceding metatarsal one. The coxal and femoral joints of the three other pair of feet are thick, depressed, very densely and finely granular.

*Colours.* Full grown specimens are above brown, slightly darker on the cephalic portion of the thorax and on the cheliceres, except near their ends; all the feet from their tibial joints to the end are red, and each joint of the three posterior pairs has near its terminal upper edge a black dot; the last joint of the maxillæ, the ocular tubercle and the claws are black. On the lower side the cheliceres, the prosternum, the abdomen are more or less dark brown, the coxæ of the feet and the sternum are yellowish brown and the feet reddish brown.

The following are the dimensions of a specimen of very nearly the same size as the one figured by Koch as *T. proscorpio*.

Total length of cephalothorax and abdomen, .....	37 mm.
Length of cephalothorax, .....	13.6 "
"    "    abdomen, including the three terminal joints, .....	23. "
"    "    cheliceres, measured above, without basal joint, .....	17.5 "
"    "    first pair of feet, excluding the basal or coxal joint, .....	44. "
"    "    second ditto, .....	25. "
"    "    third ditto, .....	26.5 "
"    "    fourth ditto, ....	36. "
"    "    abdominal seta, ditto, .....	36. "

In young specimens (with a total length of about 20 mm.) the abdomen is often slightly longer in proportion to the length of the cheliceres, but there is not the least difference in structure. The body and cheliceres are olivaceous brown, the process of the fourth joint, the whole of the fifth and sixth joints of the cheliceres red; coxal and femoral joints of all feet olivaceous, the remaining joints and the seta yellowish red. On the lower side, the basal joint of cheliceres is pale brown with the spinal processes red, the three following olivaceous brown, the two terminal red; prosternum

olive brown, coxæ and sternum yellowish brown, abdomen pale brown, feet of the same colour as on the upper side.

The species grows to a large size: the largest specimen from Sikkim has the total length of cephalothorax and abdomen 50 mm.

In Sikkim the species is found from 1000 to about 4000 feet in damp places under wood, more rarely under stones. It is the most common of all the Indian *Thelyphoni*. I have examined about forty specimens of all sizes from 20 to 50 mm., and all exactly agree in structure.

It seems very improbable (judging from the localities recorded by Mr. Butler) that there should be no specimens of this species in the British Museum, but I am not certain whether Mr. Butler refers to it under *T. rufimanus* or *proscorpio*. He must have thought it not worth while reading my description and comparing my figure of *T. Assamensis*, or else he could not have referred it to the present species.

The original name *T. proscorpio* of Latreille (Gen. Crust. et Insect., 1806, p. 130) was, strictly speaking, proposed for Linné's *Phalangium caudatum*. In spite of the numerous references to figures in various old books, it is entirely impossible to trace the species which Latreille had in view. The name would have had to be entirely ignored, but for its timely rescue by Koch who figures a Javanese species under Latreille's name, giving the same synonyms, (Arachniden, Vol X, p. 26, pl. 333, fig 771). Judging from mere figures, we are, I think, justified to regard the species, delineated by Koch, as different from Lucas' *Th. caudatus* (to which I shall refer further on). Koch's *proscorpio* would appear to have the joints of the cheliceres shorter and thicker, the fifth much stronger than the fourth, (while the reverse is observed in Lucas' figure), the centre of the anterior upper abdominal joints keeled, the first, lower abdominal joint very large and with a longitudinal groove. I hardly think that Lucas could have overlooked the last character, when describing the first lower abdominal joint; and besides that in his species he particularly refers to a separate small spine preceding the great spinal process on the fourth joint of the cheliceres; it is indicated in his figure, but not a trace of it is to be seen in Koch's figure. For these reasons, it seems to me clear that we have to consider Latreille's re-established *Th. proscorpio* as distinct from Linné's re-established *T. caudatus*.

Butler also doubtfully refers Lucas' *T. angustus* to his compound mixture of *Th. proscorpio*, but with still less reason, as I shall presently shew.

## 2. THELYPHONUS ASSAMENSIS, Stol. Pl. XII. Fig. 2.

*T. Assamensis*, Journ. A. S. B. Vol. xxxviii, Pt II, 1869, p. 205, pl. xix, fig. 1.

*The whole upper surface granular; the length of the five terminal joints of the cheliceres fully equals the first nine abdominal segments; the last foot is*

longer than the cephalothorax and abdomen together; second joint of cheliceres with five subequal spines, four being on the inner, one somewhat more distant on the upper anterior edge; third joint with a single strong spine on the lower median edge, it is longer and slenderer than the fourth joint, whose anterior process is long, subcylindrical, smooth posteriorly, denticulate on the antero-interior edge; a sharp denticulate ridge connects the central with each group of lateral eyes; first lower abdominal segment depressed, particularly in the middle, with the posterior edge convexly produced.

*Hab.*—Assam and Sikkim. The species is much rarer than the previous.

It will be seen from this abbreviated characteristic that the species is very closely allied to the previous, but after having examined several specimens of each, exactly agreeing with each other, I think they must be looked upon as two distinct species. I have already given a detailed description of the present one.

In size and coloration it almost exactly agrees with *T. scabrinus*, but is slightly more depressed, the cheliceres are somewhat more slender and longer. The spines on the second joint are subequal, four on the inner edge, and one distant one on the upper edge; the form of the third joint and the process on the fourth differ essentially, as may be readily seen by a comparison of the enlarged figures of the respective cheliceres. The feet are also proportionately longer than in *T. scabrinus*; the eight tarsal joints on the first pair equal in length their preceding metatarsus. Internally along each group of lateral eyes are two imperfect ridges of granules somewhat parallel to the central cephalic groove.

As regards general form and proportional size of the joints of the cheliceres *T. Assamensis* is also closely allied to *T. caudatus*, as emended by Lucas, but the denticles on the second joint are very different.

Butler (loc. cit. p. 202) considers *T. Assamensis* as the 'adult of *T. rufimanus* of Lucas. If such identifications were admitted, we might better give up the idea of distinguishing at all species of *Thelyphoni*; a superficial comparison of the respective figures will shew that the cheliceres and limbs of *T. Assamensis* are proportionally very much longer, than could possibly be attributed to a change in age. Lucas particularly refers to the shortness of the cheliceres\* in his description of *T. rufimanus*, their third joint is said to have no spines whatever; the first lower abdominal segment is stated to be very large. Besides that it appears to me, judging from the figure, that there is in Lucas' species no sharp ridge between the central eyes.

### 3. *THELYPHONUS* (conf.) *ANGUSTUS*, Lucas. Pl. XII. Fig. 3.

? *T. angustus*, Lucas, Guérin's Mag. de Zool. for 1835, pl. 10, fig. 3.

*Cephalothorax and abdomen long and slender, finely granular above; cheliceres in young almost entirely smooth, in old specimens with the exception of*

\* They are much shorter than the abdomen.

*the second joint mostly smooth, the length of the five terminal joints is about equal to that of the first six abdominal segments, which is slightly more than the length of the cephalothorax; the length of one of the last feet, or that of the caudal seta, is considerably less than that of the cephalothorax and abdomen together; cephalic portion of thorax at the sides between the central and lateral eyes rounded; second joint of cheliceres with five denticles, of which the two uppermost are subequal and larger than the three others; third joint not longer than the fourth, with a denticle on both the upper and lower inner edges; first lower abdominal segment depressed, with the posterior central edge somewhat narrowly produced.*

*Hab.*—Penang, Moulmein, and Pankabari (Sikkim).

I have six specimens for examination, two from each locality; they all agree in the above characters, and appear to me to be referable to Lucas's species.

The slenderness of the body and the shortness of the cheliceres are very striking distinctions as compared with the two preceding species. The cephalothorax is only about half the total length of the abdomen, with the anterior end somewhat narrowly rounded, convex above, the cephalic portion being more distinctly, though still very finely, granular than the thoracic one; the median ocular tubercle is low, rounded, smooth; the central eyes small, black; the sides between them and the lateral amber-coloured eyes rounded, with a slight longitudinal elevation above the latter. The cephalic groove is distinct, beginning a short distance behind the ocular tubercle. The central thoracic impression is rather large, with a very fine groove passing through it; lateral impressions rather indistinct. Prosternum on the face obtusely keeled with a short anterior broad point; sternum ovately subtriangular, smooth, anteriorly subtruncate.

The first nine abdominal shields are on the upper side very finely granulated, with slightly raised lateral and posterior edges. The muscular rounded pits are well marked from the second to the eight segment. The lateral kin is densely and very finely punctated and scrobiculate. The first segment has the middle of the posterior edge narrowly produced, and its length laterally is equal to that of the two succeeding ones, all three are broadly laterally punctated, smooth in the middle, while the other segments are mostly smooth, with only a few fine scattered dots.

The caudal seta is always shorter than the total body; it is distinctly hairy in young specimens, but the hairs easily wear off in adults.

The cheliceres are almost quite smooth in young specimens, while in adults the second joint is on the upper side densely punctated, the other joints are very sparingly covered with hair, these becoming, however, more numerous towards the tips. The first joint is flattened, with two anterior diverging processes, each terminated by a short spine, which has the appearance as if it had

been set into the abbreviated end of the process. The remaining five joints are in form, relative size and denticulations, exactly like those of *Th. scabrinus* on a small scale, with the single exception that, as already observed, they are mostly smooth. The eight tarsi of the first attenuated pair of feet are considerably shorter than the preceding metatarsus. The remaining feet have the femoral joints depressed and finely granular above.

Colour of adult, above, blackish brown, somewhat less pure on the abdomen and with the three terminal joints of the cheliceres reddish brown, coxal and femoral joints of all feet olivaceous brown, remaining joints bright red; lower side entirely reddish brown, only the second and third joints of the cheliceres, the points or denticles of all the other joints, the prosternum, the femora, the external margins of the abdominal segments, including nearly the whole of the four terminal ones, are blackish; the shades of brown, however, slightly differ: the last joint of the cheliceres being rather bright red, the first pair of feet reddish brown, the coxæ and sternum yellowish brown and the abdomen chesnut brown; the seta is reddish brown.

Younger specimens have all the upper dark brown as well as the lower reddish coloration paler, but the ends of the cheliceres are bright red and the feet and caudal seta yellowish red. In the four specimens from Sikkim and Penang the femoral joints of the first pair of feet are dark, in the two specimens from Moulmein the whole of these feet are reddish brown.

The largest specimen from Sikkim measures:—

Total length (excluding the seta), .....	31	m.m.
Length of five terminal joints of cheliceres, .....	11	" "
" " cephalothorax, .....	10	" "
" " abdomen, .....	20	" "
" " first pair of feet (excluding the coxa), .....	26	" "
" " second, .....	16.5	" "
" " third, .....	17.5	" "
" " fourth, .....	25.5	" "
" " caudal seta, .....	26.5	" "

A comparison of my figures and description of the present species with those of Lucas (loc. cit.) will show, that the form of the body, the proportions of the different joints and the coloration agree as closely as could be expected, so much so that I can scarcely doubt the identity of the two. There is only one point in Lucas' description which, although in itself apparently of no very great importance, is contradictory to what can be observed in my specimens. Lucas says that the third joint of the cheliceres is smooth on the upper inner edge, and provided with a spine only on the lower edge, while in all my specimens there is a distinct though very small spine on the upper edge and a somewhat larger one on the lower. As Lucas' type is in the Paris Museum, it will be comparatively easy to settle this point by a re-examination of the specimen.



4. *THELYPHONUS FORMOSUS*, Butler. Pl. XII. Fig. 4.

Ann. and Mag. nat. hist. 1872, vol. x, p. 203, pl. xiii, fig. 4.

*Upper side of body finely granular, of cheliceres nearly smooth, length of the five terminal joints of cheliceres very nearly equalling that of the first nine abdominal segments; second joint of cheliceres on the upper anterior edge with six very small denticles, of which only the two middle ones are pointed, fourth and fifth joints more swollen than the two preceding ones; edge between the central and lateral eyes swollen, rounded, not carinated; length of one of the last feet almost exactly equals the cephalothorax and the abdomen; first lower abdominal segment very large, with the median posterior edge produced, but still truncated, and depressed.*

*Hab.*—Moulmein, (in the Martaban province).

The cephalothorax is comparatively small, its length being only slightly more than half that of the abdomen; it is convex, anteriorly somewhat narrowly rounded, with the cephalic portion behind the ocular tubercle transversely rugose, further on rugosely granular, the granulation being considerably stronger than on the thoracic portion. Ocular tubercle and central eyes small, black. Cephalic groove with slightly raised margins. Edges beginning a short distance behind the central eyes and extending to the laterals broadly rounded and swollen. Median and lateral thoracic grooves and impressions narrow, but distinct and shining smooth. Prosternum narrow, subcarinate; the sternum rather elongately trigonal, anteriorly obtusely rounded, with the sides posteriorly sloping.

The first nine upper abdominal segments very finely granular, with crenulated posterior margins; the muscular rounded pits are distinct on the first eight segments, the three last narrow segments are smooth. Sides punctured, and with small scattered elongated tubercles, of which a median row slightly exceeds the others in size. On the lower side the two first segments are strongly rugose at the sides, the others only punctated, the median portions being smooth, except on the narrow second and third segments on which the punctuation extend almost to the centre. The first segment is largest, with the posterior part centrally produced, but with the edge truncate. The first pair of feet is entirely smooth, the second and third have the femoral joints, and the last all the joints, serobiculately punctated, the punctuation extending even to the hinder sides of the coxæ.

The cheliceres are sparsely hairy, except on the inner sides and near the tip. Each first joint has anteriorly a strong sharply pointed process. The second joint has on the upper margin six denticles, four being on the inner edge,—the two lower obtuse, the two upper pointed and longer,—the fifth and sixth are on the anterior edge, both very small and indistinct, the last is distant from the rest; the anterior half of the joint is transversely rugose; the lower anterior edge has two subequal very small denticles. The third

joint is slender, slightly longer than the second, with numerous sharp granules on the upper rounded inner edge, and one strong spine in the middle of the lower edge. The fourth joint is not longer but considerably thicker than the third, with a long, inner, rather equally slender, smooth, anterior process, with its termination shortly bifid and internally provided with a compressed tubercle. The fifth joint is equal in length to the preceding, but again more inflated, with a short and broad anterior process, sharply serrated on both edges. The sixth joint is moderately curved, externally grooved and with the upper and lower edges finely serrated, and internally pilose.

The length of the eight tarsi of the first pair of feet is less than that of the metatarsus. The femora of the other feet are moderately thickened and depressed.

*Colours.* Above,—cheliceres and cephalic thorax brilliantly shining blackish brown, remainder of cephalothorax and abdomen dull blackish; maxillæ with the exception of their tips and all feet bright reddish chesnut; caudal seta somewhat deeper red; sides of abdomen fulvous brown. Below,—cheliceres on the first joint dark brown, remaining joint blackish brown, sternum, coxæ and feet reddish chesnut, abdomen darker chesnut.

I have some years ago collected this species near Moulmein, wherefrom Butler's type was received. If the second joint of the cheliceres of the type specimen has no indication of any other but two denticles, the occurrence must be looked upon as an accidental variation. The form of the body and of the cheliceres is so characteristic, that the species cannot be easily mistaken with any other. The following are the dimensions of an apparently full grown specimen:—

Total length of cephalothorax and abdomen, .....	26	m. m.
Length of the first terminal five joints of cheliceres, .....	13.5	" "
" " cephalothorax, .....	9.	" "
" " abdomen, .....	16.5	" "
" " first pair of legs (without coxæ), .....	28.5	" "
" " second, .....	15.5	" "
" " third, .....	16.5	" "
" " fourth, .....	24.5	" "
" " caudal seta, .....	19.	" "

##### 5. *THELYPHONUS INDICUS*, n. sp. Pl. XII. Fig. 5.

An *Thel. caudatus* auctorum!

*Upper side very finely granular; the first nine abdominal segments, centrally, with a partial, very fine carina; cheliceres mostly smooth, except on the second and third joints which are densely punctated; the length of the five terminal joints of the cheliceres equals that of the first seven or seven and a half abdominal segments; the length of one of the last pair of feet is very nearly equal to that of the cephalothorax and abdomen taken together;*

*a short sharp edge in front of the lateral eyes, not continuing to the central eyes; second joint of cheliceres with six small, subequal denticles, third not longer than the fourth, with a little spine above and below; first lower abdominal segment very large, convex, centrally grooved.*

*Hab.*—South India, Western Bengal, and the Malay Peninsula.

The cephalothorax is rather obtusely rounded, with the perpendicular front side perfectly smooth; the ocular tubercle is also smooth and very high, the circumference round each black central eye being depressed. From the ocular tubercle passes in a curve a rounded edge below the central eye, and after a short distance from this one joins a thin, but sharp and finely serrated, ridge which continues to the lateral eyes; the latter are pale amber yellow. The upper side of the cephalic thorax is flattened, indistinctly granularly rugose, with a rather small central groove. The thoracic portion is very finely granular and most minutely punctated, with the central depressions distinct, but the lateral ones ill-defined. The abdomen is one sixth broader than the thorax, very finely granular, with a fine central carina, scarcely traceable on the fourth and fifth segments; all have a posterior submarginal row of very minute granules; the last three narrow segments are smooth. The first segment on the lower side is very large, smooth, centrally grooved, with the posterior edge somewhat produced and broadly truncate. All the other segments are finely rugose; the second and third being very narrow.

All the joints of the cheliceres are internally distinctly pilose. The first joint is sparingly punctated; on the median anterior part it is transversely rugose, terminating with a sigmoid, pointed process. The second joint has an anterior rounded shovel-like edge provided with six subequal denticles, of which the two outermost are more distant from the other four than these among themselves; on the lower edge there are two unequal denticles. The third joint is short, with a small denticle at the inner upper end and a larger one on the middle of the lower inner edge. Both the second and third joints are densely punctated above and outwardly, and granular below; the following are mostly smooth. The fourth joint is slightly thicker than the third, with a long, pointed, anteriorly and posteriorly serrated process; it has no spine on the lower side. The fifth joint is again somewhat more inflated with a short, broad, depressed process, sharply serrated on both sides; on the front margin of the lower side there is a minute denticle. The sixth joint is slender, considerably longer than the process opposite to it; the upper and lower inner edges are, as usually, finely serrated, and near the tip there is on the upper edge a conspicuously enlarged tubercle.

The tarsi on one of the first pair of feet are shorter than the preceding metatarsus. The femoral joints of the other feet are compressed, granular

above, smooth below; the last foot is very little shorter than the whole body, and the caudal seta fully equals in length the latter, it is multi-articulate and densely pilose.

Upper side of cephalothorax and abdomen dull brownish black; cheliceres shining deep chesnut, feet and seta bright chesnut. Lower side,—cheliceres same as above, feet, sternum and first abdominal shield bright chesnut, rest of abdomen deeper chesnut.

Total length of cephalothorax and abdomen, .....	35.5 m. m.
Length of the five last joints of cheliceres, .....	17.3 " "
" " cephalothorax, .....	12.1 " "
" " abdomen, .....	22. " "
" " first pair of feet (with coxae), .....	38 " "
" " second, .....	22. " "
" " third, .....	24. " "
" " fourth, .....	33. " "
" " caudal seta, .....	36. " "

The preceding description and the figures refer to a South Indian specimen which I had received from Major Beddome.

Another specimen was collected by Mr. Ball near Sirgúja in Western Bengal. It agrees with the former in every particular, except that the denticles on the second joint of cheliceres are somewhat stronger, and that the fourth and fifth joints are not so much inflated, both being only slightly thicker than the third.

Several other specimens were obtained by Mr. Wood-Mason's collector at Jahore, at the extreme south end of the Malay Peninsula. These also agree in every point of structure, the proportions of the body, &c., with the type form, but the first, second, third and fourth joints of the cheliceres are more densely punctated, while the tumidity of the fifth is intermediate between the South Indian and the Bengal specimen. The six denticles on the second joint of the cheliceres are well developed, and the process on the fourth is a shade broader than in either of the two Indian specimens.

Judging from the references to the two localities Madras and Bengal, it would seem probable that the present species had been alluded to by Mr. Butler under the name *Th. caudatus*, though the remark referring to the broad body and depressed abdomen would rather apply to the next species.

But here the question arises what is *Thelyphonus caudatus* = *Phalangium caudatum* of Linnaeus? Mr. Butler (loc. cit.) gives among others as the reference of *T. caudatus* Linnaeus's Syst., and Fabricius' Ent. Syst. If anybody will look through these references, he will, I think, find very little satisfaction in the definition of *T. caudatus*.

As habitat of the species, Mr. Butler gives Ceylon, Madras, Bengal and Tenasserin, and says that it is a broad, well marked form, having

six teeth on the second joint of cheliceres and a very depressed\* abdomen, and that it has been confounded with two, if not three, other species! Now I confess after having carefully looked over the references alluded to and Mr. Butler's notice, I have not succeeded in tracing Linné's *T. caudatus*, nor will, I think, anybody else do so; and if the species has been confounded by older writers, as no doubt it was, Mr. Butler has only added his share to that confusion.

Let us see whether and how far we might be justified to adopt the name *T. caudatus*.

Linné named a species in 'Syst. naturæ 619, n. 2' *Phalangium caudatum*, which he characterises as '*chelis ramosis, ano setifero.*' In *Museum Lud. Reg.*, 1764, p. 426, the celebrated author describes the same species in detail and gives 'habitat in Java,' quoting at the same time Seba's figures 7 and 8 on pl. 70 of his *Thesaurus*. To determine anything according to Seba's figures is an altogether hopeless case, but we know that Linné's description of *Ph. caudatum* was drawn up after a Javanese specimen, and we must, therefore, look to Java for Linné's *Ph. caudatum*. When we see through our literature we find, I think, only two descriptions and figures, which can bear out any comparison with Linné's type, and these are Lucas' *Th. caudatus* ex Java, and Koch's *Th. proscorpio* ex India orientali et Java.

In reading carefully over Linné's description, I think, the passages corpus.....ferrugineum,.....chela.....articulis 5 constructæ.....  $\beta$  (*i. e.* articulus tertius) subrotundus, inermis,...  $\gamma$  (*i. e.* art. quartus) subrotundus..... are decidedly more in favour of Lucas's than of Koch's figure. If we, therefore, wish to retain Linné's name we can reasonably, I believe, only adopt it in the form in which it had been introduced into science by Lucas in his Monograph of the genus in Guérin's *Mag. de Zoologie* for 1835. Any other meaning, which we force upon Linné's name, is more arbitrary than this, still I do not wish to leave altogether the references of previous authors to this name without notice.

I have already (p. 133) stated the reasons, which appear to me to indicate that Koch's reinstated *Th. proscorpio* of Latreille is distinct from Lucas' *Th. caudatus* of Linné.

Fabricius copied Linné. In *Syst. entomologie*, 1775, p. 441, he only added 'habitat in India orientali,' and I do not think it improbable, that several specimens of *Thelyphoni* had been sent by the French and German Missionaries from South India to European Museums.

Pallas' two figures most probably refer to *Th. scabrinus*. He also had Indian specimens.

Latreille, both in his *Hist. nat. des Crust.*, p. 130, pl. lx, fig. 4, and in his *Gen. Crust.*, p. 130, evidently confounded various species from differ-

\* Linné says: abdomen ovato-oblongum, supra et subius gibbum.

ent parts of the world under one name. He does not give any descriptions.

The figure in Guérin's *Régne animale* would, if correct, represent a species distinct from *Th. Antillanus*, Koch, as already (p. 128) observed.

Douglas and M. Edwards' figure in their edition of the *Régne animale* most likely represents Koch's *T. proscorpio*.

I do not think it would be profitable to go further with this review, even if I had all the old books at hand. I have looked over many of these *historical* figures and descriptions, and if anybody wishes to study the history of the genus, he might do the same, but if he wishes to *determine his species*, he will find it much more profitable, to ignore every reference written prior to 1835, the date of Lucas' Monograph of the genus.

#### 6. THELYPHONUS BEDDOMEI, n. sp. Pl. XII. Fig. 6.

*Upper side of body granular, of cheliceres sparsely punctated; length of the five terminal joints of cheliceres equal to the first eight abdominal segments, these have on the upper side a median thin ridge; second joint of cheliceres with seven denticles on the upper edge; third joint on upper side shorter than the fourth, above and below with a spine; the length of one of the last limbs very nearly equals the total length of the body; a very fine short ridge in front of the lateral eyes; first lower abdominal segment enlarged, along the middle indistinctly grooved, with the posterior edge centrally much produced and rounded.*

*Hab.*—Annamally mountains, South India.

The cephalothorax is much higher anteriorly than posteriorly, rounded in front, with the ocular tubercle prominent, smooth, its posterior portion being separated by a fine incomplete transverse groove from the intra-ocular one; central eyes of moderate size, dull yellowish; lateral eyes amber coloured, with a short, very thin and finely serrated ridge in front of them, disappearing already at the middle of the distance between the lateral and central eyes. Cephalic thorax granularly rugose, shining; thoracic portion conspicuously broader, more finely granular, dull. Cephalic groove deep, median thoracic and postocular pits and lateral groove well developed, smoothish, shining. Sternum elongately semi-elliptical. Abdomen rather broadly ovate and depressed, above granular, with very slightly raised posterior and lateral margins, the first eight segments with a central longitudinal fine ridge. Sides granularly scaly. Lower surface almost smooth, with sparse fine pits; first segment much larger than any of the others, depressedly convex, longitudinally indistinctly grooved, and with the central posterior edge considerably and rather narrowly and roundly produced.

First joint of cheliceres with the usual anterior process, provided with a rapidly attenuated sharp point. Second joint on the upper edge with seven denticles, of which the outermost is the smallest and the median on

the inner anterior corner the largest; below with two subequal denticles. Third joint with a distinct denticle on the upper and a slightly larger one on the lower side, the latter is accompanied by a minute sharp granule. These two joints are above and below rather densely punctated. The fourth joint is more swollen and larger than the third, with a depressed, anteriorly and posteriorly sharply serrated process, and a little spine on the median anterior lower edge. Fifth joint somewhat thinner than the previous, with a quite similar process than on the preceding joint, but slightly shorter, and also with a denticle on the lower side. Sixth joint, or movable claw, long, with the upper and lower inner edges serrated.

Tarsi of first pair of feet slightly shorter than the preceding metatarsus. All other feet with compressed, and on the upper side finely granular, femoral joints. Caudal seta slender, with rather elongated, hairy joints; its length equals that of the whole body.

Body including the seta, above, dark brown, on the cheliceres and on the cephalic portion of the thorax shining blackish brown; feet chesnut; lower side, deepest brown on the cheliceres and on the posterior end of the abdomen, dark brown on the first joint of cheliceres and on the anterior part of the abdomen, and lighter brown on the coxæ of the feet and on the sternum.

Total length, .....	40.5 m. m.
Length of the five terminal joints of cheliceres, .....	19 " "
" " cephalothorax, .....	14.5 " "
" " abdomen, .....	25. " "
" " first pair of feet, .....	42.5 " "
" " second, " .....	23.2 " "
" " third, " .....	25.5 " "
" " fourth, " .....	28. " "
" " caudal seta, .....	39.5 " "

The number and distribution of the denticles on the second joint of the cheliceres, the broad abdomen, the form of the first lower abdominal segment, and the slightly longer limbs distinguish the present species from the previous.

#### Explanation of plate XII.

Fig. 1. *Thelyph. scabrinus*, n. sp., p. 130; 1a, right chelicer, enlarged twice the nat. size; 1b, four anterior lower abdominal segments.

Fig. 2. *Thelyph. Assamensis*, Stol., p. 133, right chelicer, enlarged twice the nat. size; 2a, four anterior lower abdominal segments.

Fig. 3. *Thelyph. (conf.) angustus*, Lucas, p. 134; 3a, left chelicer enlarged three times the nat. size; 3b, four anterior lower abdominal segments, enlarged twice the nat. size.

Fig. 4. *Thelyph. formosus*, Butler, p. 137; 4a, right chelicer, and 4b, first four lower abdominal segments, both enlarged twice the nat. size.

Fig. 5. *Thelyph. indicus*, n. sp., p. 138; 5a, right chelicer, in twice the nat. size; 5b, four first lower abdominal segments.

Fig. 6. *Thelyph. Beddomei*, n. sp., p. 142; 6a, left chelicer, in twice the natural size; 6b, four first lower abdominal segments.

NOTE ON THE GENUS *GYMNOPS*, W. BLANF., (LACERTIDÆ),—  
by W. T. BLANFORD, F. G. S., C. M. Z. S.

[Received 12th April, 1873.]

In the Journal of the Asiatic Society of Bengal for 1870, Vol. xxxix, Pt. II, p. 357, I proposed to distinguish a new and peculiar form of *Ophiops* from Chhatisgarh by the subgeneric title of *Gymnops*. The species, to which I applied the name of *Ophiops (Gymnops) microlepis*, differs from the typical forms of *Ophiops* found in India and Western Asia in its more elongate proportions, longer tail, single postnasal and minute dorsal scales.

Dr. Stoliczka has since obtained the same species in other parts of India and especially in Kachh (J. A. S. B. 1872, Vol. xli, Pt. II, p. 90 and Proc. A. S. B. 1872, p. 74), and he has adopted the name *Gymnops* as a generic term, founding the distinction from *Ophiops* mainly on the difference in the character of the dorsal scales, which are much smaller and more granular than in true *Ophiops*, although they are distinctly keeled and imbricate. Quite recently Proc. A. S. B., July 1872, p. 126, Dr. Stoliczka has described a second species *Gymnops meizolepis* from Kalabagh on the Indus. This has somewhat larger scales than *G. microlepis*, but it possesses the same elongate form, the tail from the anus being more than twice the length of the body, and it again presents the peculiarity of a single postnasal instead of two or three as in *Ophiops*.

But the name *Gymnops*, whether considered as generic or subgeneric, cannot be retained for this type of naked-eyed lizards, as it has been twice employed in ornithology, having first been applied by Spix to a South American genus of Raptores, for which, however, an earlier generic title viz., *Daptrius* existed, secondly by Cuvier to a Malayan genus of *Sturnidæ*, allied to *Eulabes*.

Under these circumstances I propose to change the name of the Indian lacertian genus, above specified, to *Chondrophops* in reference to its somewhat granular scales.



ON *AQUILA BIFASCIATA* AND *AQUILA ORIENTALIS*,—  
by W. E. BROOKS, C. E., ASSENSOLE.

[Received 8th April, 1873.]

I have long had in my possession two specimens of *Aquila orientalis*, Cab., one sent me by Dr. Bree and labelled by Mr. Gurney, and the other from Mr. Dresser. The latter is a *Sarepta* specimen from the Volga region, and the former, from the Dobrudscha.

On returning the Dobrudscha example, which Dr. Bree had submitted to Mr. Gurney, the latter sent the following memorandum.

"The eagle which I have ticketed '*Aquila orientalis*, Cab.' is identical with that so often sent in collections from *Sarepta* near the mouth of the Volga, and is in fact the only species of Eagle which I have seen from that locality. I have hitherto been in the habit of calling this eagle '*Aquila clanga* of Pallas,' but as Pallas does not appear, by the description of his *Aquila clanga* in the Zoog. Ross. As., Vol. I, p. 351, to distinguish between this eagle and the smaller spotted eagle *A. nœvia*, and as his measurements, which are given in old French feet, inches, and lines, (for a scale of which see Finsch and Hartlaub's *Vögel Ostaf.*) agree better with *A. nœvia* than with the present species, it will perhaps be best to adopt for the present species the name of *Aq. orientalis*, proposed by Cabanis in the *Journal für Orn.* 1854, p. 369, (note), which though not very well chosen is the next in order of priority and the earliest that can with certainty be applied to this eagle exclusively. The specimen now sent appears by its measurements to be a female, and is in adult plumage; the immature birds of this species being spotted in precisely the same manner as those of *Aquila nœvia* which is well shewn in Yarrell's figure of the 'Spotted Eagle.'"

I quote this memorandum by Mr. Gurney to shew upon what good authority one of my specimens is named *Aquila orientalis*, and the other, sent me by Mr. Dresser labelled *A. clanga*, *Sarepta*, closely resembles it.

Mr. Gurney's statement, that the immature is spotted like *Aquila nœvia*, is, as far as I can see at present, a mistake; for we have the bird in India (*A. bifasciata*) and it never in any way resembles *A. nœvia*.

I have, from the first, been struck by the great similarity of these two specimens to our Indian *Aquila bifasciata*, Gray and Hardwick; but had not till the other day obtained Indian specimens according in every respect, to a feather, with the European examples of *A. orientalis*, above referred to. Now I have, and the accordance is so beautifully perfect, that there is no

alternative, but to come to the conclusion that *A. orientalis* is identical in every respect with *A. bifasciata*.\*

I have now, therefore, three European killed examples of *A. bifasciata*; the third being that sent me by Capt. Elwes, and referred to in "Stray Feathers," Vol. I, p. 291. The two first are in nearly mature plumage, and the third is quite mature; and is the finest specimen of the bird I have seen.

The two sent as "*A. orientalis*" have only slight indications of the nuchal patch; otherwise I should have recognized them at the first glance as *A. bifasciata*, as was the case with Capt. Elwes's Bosphorus bird. This term has, I believe, priority over *A. orientalis*, Cabanis, and if so will be retained for this eagle.

The application of Pallas's term "*A. clanga*" to the same species by some European writers is, I believe, an error, if I read the original description correctly. It appears to refer to our Indian spotted eagle which we accept as *Ag. navia*, and which I believe to be the true *navia*. Klein, whose work is dated 1750, is the author of the term *Aquila clanga*, and Pallas quotes and adopts this *synonym* in preference to the older term *Aquila navia*, Schwenckfield. This term Pallas also quotes under the head of *Aquila clanga*, but as a synonym. Schwenckfield's work is dated 1603.

In a letter received the other day from my friend Mr. Anderson, he records the occurrence of a lineated *A. Mogilnik* at Aden, which was stuned by flying against the telegraph wires there.

I may as well mention here that the Indian Imperial Eagle, to which I applied Hodgson's term of *A. crassipes*, is identical with the East European bird, *A. Mogilnik*, better known as *A. imperialis*, but the former is the prior term.

I compared our bird with an adult Turkish specimen sent me by Dr. Bree. Mr. Gurney also came to the same conclusion, after comparing the adult Indian birds, I had sent home, with European examples.

The West European Imperial Eagle is, however, quite distinct and is now known as *A. Adalberti*, Brehm. This is the species said to have no lineated stage, and having, when adult, an excess of white on the scapulars and ridge of wing.

\* [Mr. V. Ball and I had the pleasure of comparing the two specimens of *A. orientalis*, referred to by Mr. Brooks, with a series of Indian *A. bifasciata*. They undoubtedly appear to be perfectly identical, both in structure and coloration. If the determination of those two specimens as *A. orientalis* is correct, (and upon such good authority, as Mr. Gurney, it ought to be), there can be no doubt that the two species must be considered as identical. F. Stoliczka.]

I sent a fine series of our Indian *Aquila hastata* to the Norwich Museum. Mr. Anderson also sent one example in mature plumage.

Besides these we sent others to ornithological friends. I hear from Messrs. Gurney and Dresser, that the adult plumage of this species is not to be distinguished from that of the small Pomeranian spotted Eagle which they term the true *Aquila nœvia*.

They assert, however, that though the adults are alike, the immature birds differ.

This is a point for further investigation, but the perfect accordance of the adults leads me to expect the same in the immature birds. The connection between the immature and the adult is the first point to be established, and this can only be done by the field naturalist.

One of my ornithological friends informs me that the immature of *A. orientalis* (which we have shewn is *A. bifasciata*), has spotted plumage like that of *A. nœvia*; another friend informs me he has received the immature bird, and it "is strangely like *A. bifasciata*!" Now the latter eagle is *not spotted*, and the "doctors," who are both men of repute, "differ."

These points will all be cleared up it is to be hoped before long; and we shall perhaps have the natural history of the Eagles as clear and as correct as that of the common Rook, with little or nothing else to be learned. At present the Eagles appear to be in a state of dire confusion, which the English naturalists are daily making worse.\*

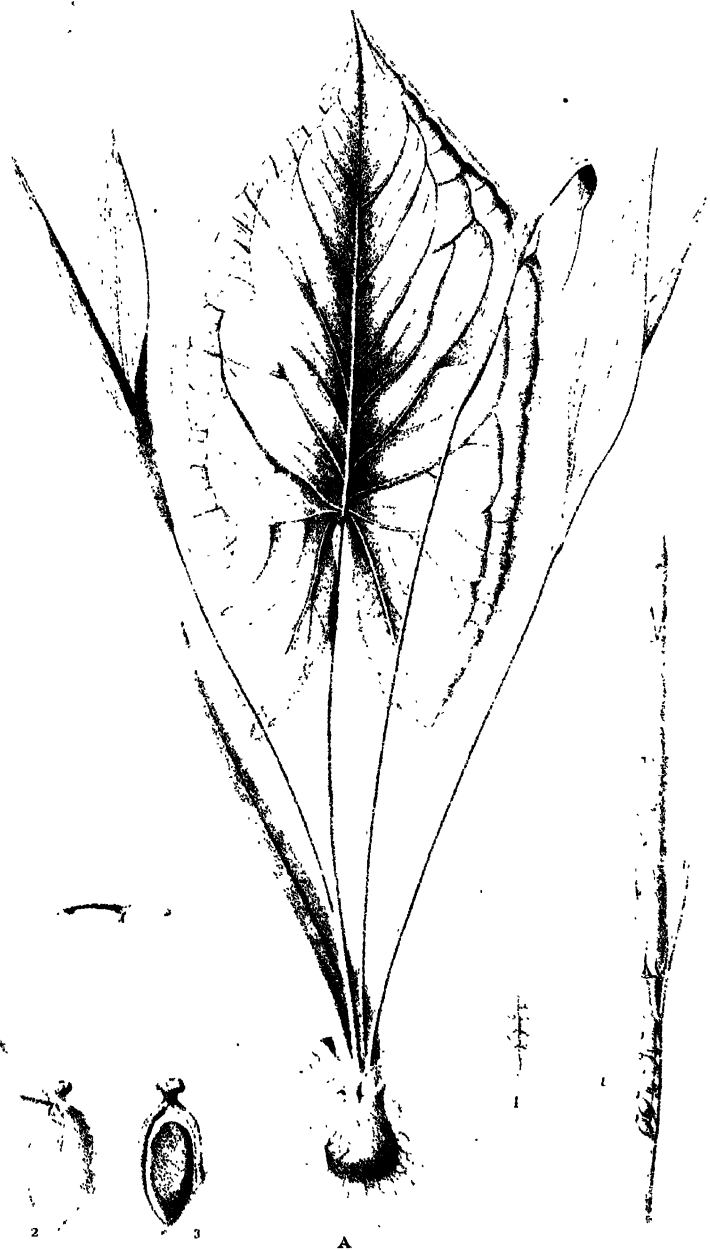
\* Since the foregoing was written, Capt G. F. L. Marshall, who is much interested in this subject, came and examined the series used. He fully concurred in the identification of *A. orientalis* with *A. bifasciata*, and was even more positive than I was that the Danzig killed *Aquila hastata* was indeed that species. It will be remembered, it was sent to me labelled "*A. nœvia*." My English Ornithological friends with whom I communicated are incredulous regarding my identifications, and I, therefore, refer to my friend's corroboration. If all fails to convince them I shall have the series exhibited at a meeting of the Zool. Society.





*Hemiorchis Burmanica*, Kurx.





*Hapaline Benthamiana*. Schott

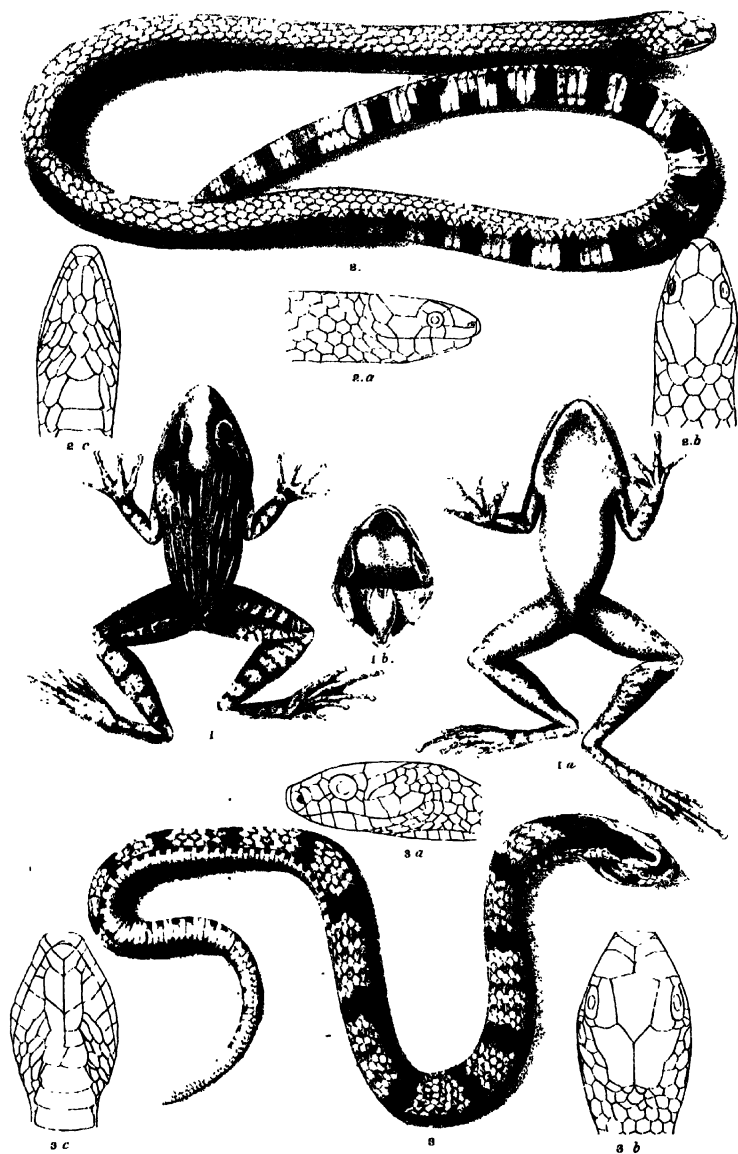






*Stemonia Griffithiana*, Kura.





Figs 1, 1a, 1b. *Rana plicatella*, n. sp., Penang, p. 116

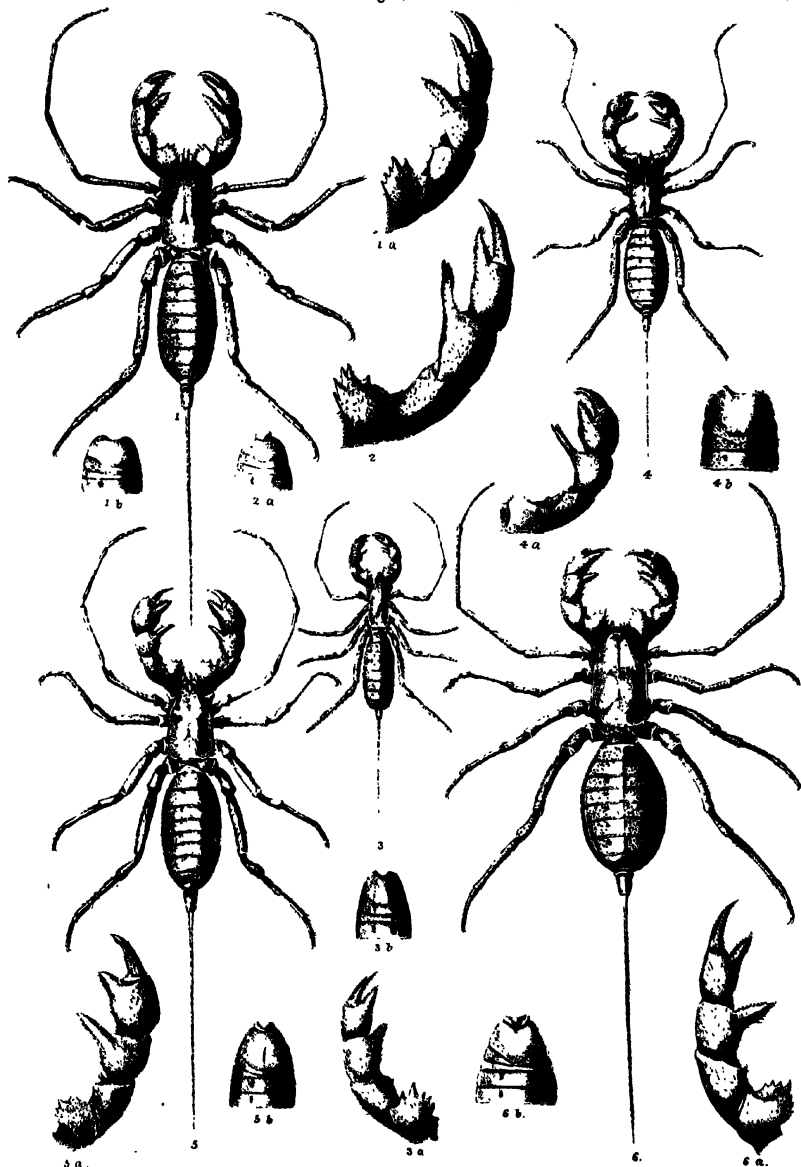
Figs 2, 2a, 2b, 2c. *Calamaria Stahlkuechti*, n. sp., Sumatra, p. 149

Figs 3, 3a, 3b, 3c. *Simotes catenifer*, n. sp., Malay Peninsula, p. 181.

S. Sadgheh, lith.

Calcut





1. *Th. scabrinus*, p. 130      4. *Th. formosus*, p. 137  
 2. *Th. Assamensis*, p. 133      5. *Th. indicus*, p. 138  
 3. *Th. (conf.) angustus*, p. 134      6. *Th. Beddomei*, p. 142  
 See explanation on p. 143.



# JOURNAL OF THE ASIATIC SOCIETY.

Part II.—PHYSICAL SCIENCE.

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A CONTRIBUTION TOWARDS A MONOGRAPH OF THE INDIAN PASSALIDÆ,—  
by DR. F. STOLICZKA.

[Received 27th April, read 7th May, 1873.]

Some years ago, when I visited my veteran friend Dr. J. J. Kaup in Darmstadt, I found him, quite unexpectedly, busily engaged with PASSALIDÆ. He urged me most strongly to collect Indian specimens, which I did; but the collection progressed so very slowly,—in spite of the very numerous applications which I made for assistance,—that Kaup's Monograph of the family appeared early in 1871\* without my little contribution in the way of Indian materials.

When I saw that the geographical distribution of the PASSALIDÆ is so very peculiar and interesting for the study of our Indian fauna, I resolved to continue my researches, and to publish as far as possible a revised Monograph of all the Indian species, with such little additions to the anatomy and development, as might be obtainable. Of these points I shall, however, not speak on this occasion; they will be fully treated in my Monograph, which will be accompanied with all the necessary illustrations. I will merely mention that in India we meet with PASSALIDÆ in those districts only which have a Malayan fauna. No species is as yet known from the Himalayas west of Nipal, or from any part of Central India or the Panjáb.

The object of the few following lines is chiefly to give a list of the Indian species with authenticated localities, together with diagnoses of the new species which had lately come under my observation. I am sorry that I cannot complete more fully the task which I undertook, but in the middle of pre-

\* Berliner Entomologische Zeitschrift, vol. xv.

parations for an expedition to Central Asia I am not allowed to do more, than to shew those who assisted me that their materials had been duly appreciated. My old friend Dr. C. Felder, the Lord-Mayor of Vienna, has sent me the whole of his collection of PASSALIDÆ for examination, and Dr. L. Redtenbacher, the Director of the Vienna Museum, sent me a great number of eastern species. These are rare instances of liberality and true interest in the work. My thanks are further due to Messrs. W. S. Atkinson and J. Wood-Mason, Messrs. Peal (Assam) and Mandelli (Darjeeling), Major H. H. Godwin-Austen, Major Beddome, Mr. Stahlknecht of Singapore, Mr. Theobald, Rev. Baker, Dr. Cameron, the late Dr. Walter Abbey and the late Capt. Mitchell of Madras. The original collection in our Museum contained only five of the commonest species.

In recording the species I will follow Kaup's last Monograph on the subject. Whatever opinion various naturalists may have regarding the mode of classification which that distinguished author has adopted, I do not think that they will find much fault with the limitation and characteristics of the genera\* and species. Undoubtedly that Monograph is the most complete and the most remarkable paper which the philosophical school of naturalists has in late years produced. I am now not prepared to say anything for or against it, but I will do so in my Monograph, when I hope to have examined a larger number of PASSALIDÆ, than I had been able to do up to the present. Such mental productions† must not be disposed of with prejudice, they are entitled to receive a fair trial and a full share of all opinions *pro* and *con*, before we side one way or the other. Nobody will, after careful perusal, deny the fact, that Kaup's classificatory arrangement has in many respects very considerable advantages; it is easy and practical, but time and research must shew whether it can be adopted or not. Whenever I shall have any scruples against generic definitions, or against the quinquennial divisions, I shall state my reasons without any reference to the validity of the whole system.

Before proceeding to the details I have only to mention that I shall include in the present list all the species known to occur in the East Indies, viz., India proper (Vorder-Indien), with Eastern Bengal, Burma, and the Malayan Peninsula as far south as Singapore (Hinter-Indien).

#### *Sub-fam. AULACOCYCLINÆ.*

##### 1. *AULACOCYCLUS PARRYI*, Kaup.

I received numerous specimens from Malacca.

\* Even in the very limited sense in which the author defines them.

† For a short exposition of the principles of the system, and a brief discussion thereon, see Proc. of the Society for May, 1873.



2. *CERACUPES AUSTENI*, n. sp.

This species possesses all the characteristics of the genus, as given by Kaup. Total length 22 m.m., width of head 4.8, of prothorax 6.6, of wings at the shoulders 6.8, length of elytra 12.3 m.m.

In general structure it is very like *C. fronticornis*, but the clypeus-horn is obtusely rounded at the end, not emarginated, the upper concave edge is punctated, longer and narrower than in that species. The processes on the jaws are posteriorly flattened and rugosely striated, anteriorly convex and smooth. The lateral scar of the prothorax forms a punctated S. Scutellum smooth, waist at the sides densely punctated.

The furrows of the wings are coarsely punctated, without any perceptible hair. The metasternum is convex, generally smooth, only along lateral margins finely punctated. The median tibiae have externally two spines, the posterior ones only an indication of a small point.

*Hab.*—Naga hills, North Eastern districts of Bengal. Major H. H. Godwin-Austen found a couple of specimens at an elevation of 6000 feet.

I have never received *C. fronticornis* from any of these districts. It must come from the Chinese portion of eastern Tibet, for western Tibet has no forests.

3. *COMACUPES CYLINDRACEUS*, Perty.

*Hab.* Johore, at the southern end of the Malay Peninsula. One specimen measures: total length 26.4 m.m., width of clypeus 5.5, (Kaup gives 7 m.m.) width of prothorax 8, (Kaup gives 9), length of elytra 14.9 m.m., (Kaup gives 25½, which is clearly a mistake for 15.5 m.m.).

Kaup's specimens from Malacca appear to have had a much broader clypeus and prothorax, but the two Johore specimens which I examined agree with the description of the species in every other detail.

4. *COMACUPES MASONI*, n. sp.

Total length 30.5 m.m., width of clypeus 6.4, of prothorax, or shoulders, 9.1, length of elytra 16.75 m.m.

Resembles *C. basalis*, but is much more slender; upper lip with the front surface sloping, but scarcely indented at the edge; densely hairy. Clypeus densely punctated and shortly hairy, except in front of the horn, which is large, compressed, strongly projecting in front and very slightly elevated, with an obtuse end sharpened from below, its posterior end is almost vertical without a free point, the upper ridge is obtusely rounded, except for a short distance along the middle which is concave and rugose. Prothorax with the lateral scar small, smooth, with a little dot in front of it, as in *C. cylindraceus*, but in the present species the marginal furrow is in front near the corner almost angularly bent in. The furrows on the wings are slightly more coarsely punctated, than in the last species.

Scutellum and the waist at the sides and the whole of the lower side densely punctated and shortly hairy. Lower lip densely and coarsely punctated and hairy, with barely an indication of a central carina. The last four abdominal segments almost quite smooth. Middle and hind tibiæ each with a strong spine.

*Hab.*—Johore, obtained by Mr. J. Wood-Mason.

Kaup quotes *C. cavicornis* from Malacca and Penang. I have not seen it, but there is a specimen of a *Comacupes* in Dr. Felder's collection, evidently belonging to a new species.\* Its locality is given as Bras., which clearly means Brasilia, there is, however, no such form described from America, the specimen came much more likely somewhere from the Philippines.

5. *TÆNIOCERUS PYGMÆUS*, Kp.

Malacca. I have as yet obtained only a single specimen.

6. *TÆNIOCERUS BICANTHATUS*, Guér.

Johore, north of Singapore.

7. *TÆNIOCERUS BICUSPIS*, Kp.

Sikkim, Assam and Cachar hills. Common. Kaup also gives Malacca.

*Sub-fam. ERIOCNEMINÆ.*

*First group. SOLENOCYCLÆ.*

8. *PLEURARIUS BRACHYPHYLLUS*, n. sp.

Total length 43, width of clypeus 9·8, of prothorax 12·5, length of elytra 14·2; total length varying from 41 to 44 m.m.

\* *Comacupes Felderi*, n. sp. Total length 22·5, width of clypeus 5, width of prothorax 6·6, of shoulders 6·8, length of elytra 13·2 m.m. Upper lip in front and laterally deeply concave, as in *Aulac. teres*. Jaws with the upper of the three front teeth very small. Clypeus smooth, with a fine groove along the anterior straight margin. Horn situated far behind, as in *basalis*, rising almost vertically, slightly inclined forward, behind with a convex, smooth, simple and rounded edge; anteriorly below the point it is first vertically truncated, then concave, falling with a broad surface to the large forehead. Ocular ridge sharply angular in the middle, terminating with a small sharp point in the anterior corner of the clypeus.

Prothorax with a median groove, deepest about the centre, and a punctated, complete marginal furrow, only slightly bent in anteriorly; lateral scurs small, subsemilunar, deep, finely punctated. Wings in the furrows indistinctly punctated, not hairy. Scutellum smooth, waist at the sides finely punctated, below entirely smooth as is also the case with the metasternum and the abdominal segments. Tongue with a central carina and with the lower halves of the sides somewhat concave and roundly dilated. Lower lip smoothish in the middle, with a central impressed projection in the front edge; its lateral branches densely punctated. Tibiæ of the front feet very broad, each with six denticles; middle and hinder tibiæ stout, each with a sharp spine.

Jaws bidentate at the end; upper lip truncated in front, covered with red stiff hairs. Antennæ long, with only three short terminal lobes. Clypeus uneven, but not punctated; the central horn is flatly convex, smooth, transversely very elongately subtriangular, anteriorly with a small projection, ending in a small free point, from which diverge in a slight curve the frontal ridges, terminating with distinct tubercles near the front edge. This frontal edge has a sharp process above each of the two lateral margins of the upper lip, the left appears to be occasionally a little larger than the right one, recalling a similar structure in *Basilianus*. The two frontal tubercles are connected by a low ridge and the margin between them is deeply concave. Supraocular ridges with a sharp point above each eye, flattened in front, and externally at each corner terminating with a small spine.

Prothorax moderately convex, with a distinct central groove, but not extending anteriorly to the margin; marginal furrow narrow, finely punctated; lateral scar forming a shortly elongated and smooth impression.

Scutellum at base finely punctated and hairy, along each side of the centre finely strigated. Waist laterally densely punctated, below smooth, somewhat transversely rugose, but without any special scar.

Elytra with the shoulders somewhat swollen and projecting, smooth; all the furrows distinctly punctated.

Tongue long, with a median and two marginal ridges, strongly contracted in the lower half. Lower lip with its branches entirely punctated and hairy, slightly depressed in the middle.

Metasternum laterally densely punctated, but the posterior sloping corners are smooth, which is also the case with all the abdominal segments.

Prothorax at the lateral lower sides, and the median femora, covered with dense, long, rufous-brown hair; anterior femora, sides of metasternum and hinder tibiæ a little less hairy.

*Hab.*—Nilgheries and Malabar. I received originally two specimens of this species from the Madras Museum, but since then several others have been sent to me by Major Beddome and Rev. Baker.

Kaup describes a single species, *P. pilipes*, from Sumatra. The generic characteristics have to be slightly altered, but in all essential points the South Indian species agrees with *Pleurarius*.

#### 9. SEMICYCLUS REDTENBACHERI, n. sp.

Total length 25·4, width of clypeus 5·2, of prothorax 7·3, of shoulders 7·1, length of elytra 14·3 m.m.

Jaws rather short, each with three denticles; antennæ moderately elongated, the three terminal lappets well developed and equal; upper lip squarish, hairy, very slightly concave at the front edge.

Clypeus rugose, punctated on the forehead, front edge very slightly emarginate in the centre, and with a small projection above the edges of the

upper lip. The horn originates in a slightly convex smooth tubercle, and extends freely and almost horizontally to near the front edge, its base is posteriorly and at the sides surrounded by a slight furrow, and from the point where the horn becomes free originates on either side a low, indistinct ridge, which makes a curve anteriorly and terminates in a small tubercle some distance short of the marginal projections. Supraocular ridges undulating, each with a sharp point above the eye and another at the anterior corner of the clypeus.

Prothorax convex, with a central groove; marginal furrow incomplete, punctated, terminating anteriorly, some distance from the central line, with an elongately ovate scar. Lateral scar large, slightly impressed, composed of a number of irregularly arranged, coarse pits; a few dots exist near the anterior corner.

Scutellum very finely punctated at the base; waist laterally densely punctated, below nearly smooth.

Elytra rather depressed above, but comparatively high; all the furrows coarsely pitted; each shoulder with a tuft of brown hair, which also extends a little posteriorly along the margin.

Tongue with three ridges, minutely punctated, tridentate at the front edge which is slightly narrower than the base. Lower lip transversely rather elongated, smooth, convex, with a rounded scar at each end; the lateral branches densely punctated. Metasternum on the posterior sloping corners coarsely punctated. Abdominal segments with an oblique furrow on either side, but in other respects nearly smooth.

*Hab.*—Ceylon. The only specimen examined is in the Vienna Museum; it was obtained by the late Mr. Zelebor during the Novara expedition.

The species almost perfectly agrees with the characteristic of the genus as given by Kaup.

#### *Second group.* LEPTAULACEÆ.

Out of the five genera distinguished by Kaup only one is represented in India, namely *Leptaulax*. It seems to be a little too closely allied to *Ciceronius*, and still more so to *Didimus*. From the last it is stated to differ by the single denticle in the centre of the front edge of the clypeus, while *Didimus* has two; but I have in a few instances also observed two denticles in both *Lept. bicolor* and *dentatus*. Of course we may say, what is in *Didimus* the rule, is an exception in *Leptaulax*, still it looks rather a little arbitrary to define genera in such cases. However, as I have not a single one of the species of *Didimus*, described by Kaup, for comparison, I do not wish to propose any changes in the genera, as characterized by him. Looking at *Leptaulax* in Kaup's sense, it seems to me somewhat doubtful that the number *five* will suffice to include all the different forms which must belong to the genus. The following details, taken with those of Kaup, may speak for themselves.

10. *LEPTAULAX DENTATUS*, Fabr.

The typical small form was obtained from Sikkim, Bútán, Assám, Tenasserim (at Mergui) and from Johore. In the Vienna collections it is represented from nearly all the Philippine islands.

The larger form, or *L. Timorensis*, is also very abundant in Sikkim (between 500 and 1000 feet), Bútán, Assám, Naga hills, Pegu (near Tonghú), and on the Andaman islands. It grows up to 37 m.m. I had very large numbers of both forms for comparison, and came to the conclusion that no definite characters exist by which the two species could be separated. I have all intermediate sizes from 21 to 37 m.m.

11. *LEPTAULAX BICOLOR*, Fabr.

Very common in Sikkim and through the whole of the Malayan Peninsula, as well as on the Andaman and Nicobar islands, in Malabar and in Ceylon. From the last locality two specimens exist in the Vienna Museum collection under the name of *Nietneri*, M. C.

A peculiar small variety, possessing cross bars in the lateral furrows of the elytra, instead of simple dots, occurs at Johore.

12. *LEPTAULAX PLANUS*, Illig.

This is, I think, a good species, the smallest of all our eastern PASSALIDÆ. It is very much more depressed, than either of the previous species, and in proportions and relative size of the prothorax and of the elytra it more closely resembles *dentatus* than *bicolor*, of which it is stated to be a synonym. Specimens from Java, Johore, and Malacca, whence I have lately obtained large numbers, measure between 13 and 14 m.m., but a somewhat larger variety occurs in Burma and on the Andaman islands. Specimens from these last localities measure 18 m.m., they are in almost every other respect identical with typical *planus*.\*

Of the third group, the ERIOCNEMINÆ, no species as yet occurred within our limits. I received *Vellejus Moluccanus* from Amboina, *Eriocnemis monticulosus* from Sumatra, and gigantic specimens of *Erioc. tridens* from Java, but none from Siam or Malacca, which localities are also given by Kaup. The last species will have, therefore, to be included in our list.

*Fourth group. MACROLINÆ.*13. *MACROLINUS LATIPENNIS*, Perch.

Malacca; apparently rare.

14. *MACROLINUS WEBERI*, Kp.

Johore; a single specimen from Mr. J. Wood Mason.

\* In Dr. Felder's collection I find a Malacca specimen named *paxillus*?

Dr. Redtenbacher (Coleopteren, Reise Oest. Fregatte Novara, 1867, p. 49) gives *Mastachilus politus*\* from Madras. There is a specimen of that species in the Vienna Museum collection, marked *Ind. or.*, and is most likely the one referred to by Redtenbacher. I very much doubt, however, that it is Indian. It was probably received from the Madras Museum, or from a collector, during the stay of the Novara at Madras. My reason for doubting the correctness of the Indian locality is based upon an observation which I made. I asked the Curator, the late Capt. Mitchell, for the loan of any specimens of *Passali*, he might have in the Madras Museum. I was promptly responded to, and shortly after received four specimens of *Passali*. Two proved to belong to a new species *Pleurarius brachyphyllus*, and the two others were *Solenocyclus exaratus* (known from Madagascar) and *Mastachilus polyphyllus* (from Australia).† After detailed inquiry Capt. Mitchell informed me, that the two first specimens (distinguished by numbers attached to them) were truly Indian, from the Nilgherries, but that the localities of the two others were unknown. They had been received from some old European collection. It seems to me very probable that something similar happened with the specimen of *M. politus*, obtained by the Novara at Madras.

Kaup describes *Macrolinus Waterhousei* and *Epispheenus Moorei* from Ceylon. I have not seen either of these.

#### *Fifth group. ACERATIÆ.*

Of the five genera, *Laches*, *Gonates*, *Aceraius*, *Cetejus*, and *Basilianus*, only the third and fifth have as yet been found in India; they are common and numerous, and the specific number of five will, I am sure, run short for what is in this case really required for specific determination, unless the genera are somewhat differently defined and grouped.

Of the other genera I have examined a few interesting species. Among these is one which Kaup would probably call the first, *moderately convex*, species of *Laches*, and the largest species of *Cetejus*; both answer exactly the characters of the respective genera. I add descriptions of the two new species‡ in a foot note.

\* Originally described by Burmeister from Van Diemen's Land.

† The Vienna Museum possesses two specimens of *polyphyllus* from China.

‡ *LACHES GRACILIS*, n. sp. Total length 26, width of head 5·5, of prothorax 7·5, of shoulders 7·6, length of elytra 15 m.m. Whole body moderately convex.

Upper lip almost quite straight in front; left jaw barely longer than the right one. The three first lobes of the antennæ short, the fourth slightly shorter than the fifth. Clypeus on its posterior half rugosely punctated; the short horn rises from the anterior central edge of a transversely elongated, smooth protuberance; from it proceed under a narrow angle the frontal carinæ, each terminating in an elongated smooth tubercle, or rather short ridge, connected by a very fine carina. The marginal tubercles of the clypeus are pointed, depressed, placed nearer to each other than the width of the

A specimen of *Gonates naviculator* from the Moluccas, in Dr. Felder's collection, has the middle frontal carina very distinct, while two others of

upper lip, they are unequal, the left being slightly larger than the right one; they are not in any way connected with the frontal tubercles, but a smooth concave field proceeds from each of these to the respective ocular ridge. The latter is angular or subtubercular above each eye, and anteriorly formed by a thin carina, terminating on the angle of the clypeus with a little spine.

Prothorax somewhat broader posteriorly than anteriorly, with a very distinct central groove; marginal furrow very narrow, with a minute punctation; lateral scars vertical, subovate, punctated; a group of distinct dots also exists above each anterior corner.

Scutellum smooth; waist laterally punctated. All the furrows of the elytra coarsely punctated, without a trace of any kind of hair.

Tongue tricarinate, the middle carina the strongest; laterally slightly concave. Lower lip convex, smooth, with a transversely elongated, small, marginal, smooth scutellum between it and the tongue; branches coarsely punctated. Waist, below, with a small oblique, ovate scar on either side. Metasternum on the posterior part sparsely, on the sloping corners densely punctated. Abdominal rings each with a linear, punctated scar on either side. Prothorax, below, as well as the middle and hind tibiae, sparsely covered with yellowish rufescent hair.

*Hab.*—Batchian island; a single specimen in the Vienna Museum.

*CETEJUS AUSTRALIENSIS*, n. sp.

Total length 33, width of head 7, of prothorax 9.9, of shoulders 9.6, length of elytra 19.2 m.m. Whole body rather depressed.

Left jaw slightly longer than the right one. Upper lip deeply emarginate, the right half being slightly shorter and a little more rounded than the left one, as in *G. naviculator*. Antennæ with six lappets, the two first being very short, the third a little shorter than the three terminal ones, which are subequal and rather slender. Clypeus entirely rugose; the horn is elongated, with a triangular tubercle on each of its basal halves. The frontal ridges issue from the horn under a moderately obtuse angle, (as in *Lept. dentatus*), and terminate with distinct points, connected by a very fine carina, from which the margin of the clypeus descends almost vertically. Both marginal tubercles are pointed, similarly formed, but the left one is conspicuously larger than the right. Each frontal tubercle is connected by a short carina with its corresponding marginal one, and besides also with its corresponding small tubercle in the middle of the supra-ocular ridge, each of which is truncated in front.

Prothorax slightly broader posteriorly than anteriorly, with a fine but almost complete central groove; sides entirely punctated, lateral scar small and rounded; marginal furrow very narrow.

Scutellum smooth, with a central basal groove; waist laterally punctated. The four central furrows of the elytra on the upper side indistinctly, the remainder distinctly, punctated, those at the sides at least twice as broad as the ridges separating them and with distinct transverse bacilli. This structure very strongly reminds one of *Basilianus cancrus*, which is also the largest species of its genus.

Tongue tricarinate, laterally concave. Lower lip convex and smooth, with a small elongately semi-elliptical scutellum between it and the tongue; a small but distinct scar on each side of the lower lip, its branches rather larger, rounded at the ends and somewhat inwardly curved, entirely but not very densely punctated. Prosternal

the same species in the Vienna Museum collection from Amboina (marked *Doleschali*, M. C.) have merely a trace of the middle frontal carina, and the prothorax is comparatively smaller.

*Gonates Germarii* was received by Mr. W. S. Atkinson from Java. Kaup describes *Laches Comptonii* from Ceylon. I have not seen it.

#### 15. *ACERATUS GRANDIS*, Burm.

This is a very common species in Sikkim, Assam, the Naga and Cachar hills. Indian specimens exactly agree in structure with the large Javanese type form, but their usual size is only 40 m.m., and I never saw one exceeding 45 m.m. In Javanese specimens generally only the ninth and tenth rib of each wing are punctated and hairy near the shoulder, while Indian specimens have, as a rule, the whole of the seventh and ninth rib punctated; it is very rarely that the pits entirely disappear on the seventh.

#### 16. *ACERATUS EMARGINATUS*, Fabr.

An extremely variable species, both in general size, as well as in the shape of the two marginal processes of the clypeus; the left one being sometimes sharply pointed at the end, or scarcely bipartite, as in *Percheron's pilifer*. The seventh and ninth ribs of the elytra are as a rule entirely punctated, very rarely is the seventh smooth. The smaller forms, between 30 and 38 m.m., are, I think, mostly males, they have the furrows of the wings perceptibly punctated; the larger specimens, about and above 40 m.m., appear to be mostly females, the furrows of their elytra are almost devoid of punctations.

The species occurs in Sikkim, Assam, Cachar, but is much rarer than *A. grandis*. I also obtained it on Penang hill, and from Johore; in the Vienna collections are specimens from China, Luzon, and Manilla.

Redtenbacher's *Passalus Nicobaricus* from Sambelong (Great Nicobar) is also undoubtedly this species, and neither a *Macrolinus* nor a *Basilianus*.

The next genus, *Basilianus*, is the most numerous in species. I possess specimens of the four species described by Kaup, and three others which I must regard as new. This is as yet almost the only instance in which I have been obliged to transgress Kaup's limit of five species. I took considerable pains to ascertain whether these species could possibly belong to any of the other genera of *Eriocnemina*, but they do not answer to the characteristic of any

process between the anterior coxæ grooved. Waist, below, smooth, with an elongated scar on either side. Metasternum smooth; on the sloping corners rugosely punctated. Sides of abdominal segments and the posterior part of the last segment mostly finely punctated. No hairs are seen on the elytræ; the middle tibiæ are moderately hairy, the hind ones somewhat less so.

*Habitat*—Australia; a single specimen in Dr. C. Felder's collection.



other genus than *Basilianus*. They differ from *Aceraius* by the absence of hair at the sides of the elytra, and from the other genera of the *Aceraiæ* in the shape of the lower lip and the want of a scutellum between it and the tongue; the same character holds good in a comparison with *Mastachilus*, and the unequal lappets on each of the antennæ readily separate them from the other *Macrolinæ*. The seven species may, however, be divided into two sections, as follows:

a. With the marginal processes of the clypeus very asymmetrical,—*Nilgheriensis*, *inæqualis*, *Cantoris*, *Indicus*.

b. With the marginal processes of the clypeus very slightly or scarcely asymmetrical,—*cancrus*, *Andamanensis*, *Sikkimensis*.

17. *BASILIANUS NILGHERIENSIS*, Guér.

The usual size of Malabar specimens is only 28 m.m.; it does not appear to be a common species.

18. *BASILIANUS INÆQUALIS*, Burn.

Common at Malacca. Kaup gives it from Singapore and Penang. The largest specimen which I have examined is nearly 30 m.m., and the smallest 21·7 m.m., the length of the elytra being 13·7, width of head 5·5, of prothorax 6·9, the proportionate size of this last being often remarkably small.

19. *BASILIANUS CANTORIS*, Hope.

The usual size of Sikkim and Assam specimens is 33 to 35 m.m. Kaup gives it also from Malacca and Cambodja.

20. *BASILIANUS INDICUS*, n. sp.

Total length from 33 to 40 m.m., one specimen is 37·6, width of its head 9, of prothorax posteriorly 12, of shoulders 11·5, length of elytra 21·5 m.m.

Left jaw slightly straighter and longer than the right one. Upper lip widely and rather deeply emarginate in front. Antennæ, with the three terminal lappets longest and subequal, the second and third about half the length of the fourth, and the first is very short, sometimes scarcely traceable. Clypeus rather large, mostly smooth, or sparsely punctated, with the supra-ocular ridges anteriorly truncated with an inward slope, the inner edge of the slope being sometimes very indistinct, while the outer one is sharp, and projects at the corners, somewhat as in *Aceraius grandis*. The horn rises out of a transverse long tubercle, it is subpyramidal, the posterior slope being gradual, the anterior vertical; the frontal carinæ are very fine, forming together a wide semicircle, each terminating in a blunt tubercle, and from each proceeds a very fine carina to the respective marginal process of the clypeus; the left process is the longer, depressed, inwardly bent, obtuse at the end; the right one is thick, short, obtusely pointed.

The prothorax is moderately convex, as in *Cantoris*; it is conspicuously wider posteriorly than anteriorly, with a central groove which is almost as complete, as it is usually to be found in American forms and in these only; marginal furrow anteriorly somewhat widened, bent in and punctated; lateral scar small, rounded, generally with a few pits; the sides of the prothorax are either quite smooth (in the larger specimens), or punctated in front of the scar and at the anterior corner (in the smaller specimens). Whether this is a distinction of sex I cannot say.

Scutellum centrally very minutely strigated; waist laterally densely punctated. Shoulders slightly thickened, only anteriorly with few very short and thin hairs. Furrows of the elytra, above, slightly, laterally distinctly punctated; without hair.

Tongue tricarinate. Lower lip in the middle somewhat convex, mostly smooth or punctated, anteriorly sometimes slightly indented; its branches densely punctated. no scars exist on it. Waist, below, smooth, with elongated diverging, dull scars. Metasternum smooth, its posterior sloping corners rugosely punctated, its sides entirely hairy. Abdominal segments laterally with linear scars.

Prothorax posteriorly, below, covered with brown hair; middle tibiæ very densely, posterior ones less hairy.

*Hab.*—Nilgheries and Malabar. I received several specimens from Major Beddome, Rev. Baker, and Surgeon Major F. Day.

## 21. *BASILIANUS CANCRUS*, Perch.

The largest specimen in my collection is 45 m.m. It has as yet only been obtained in Nipál, Sikkim, Bútán, and Assám.

## 22. *BASILIANUS ANDAMANENSIS*, n. sp.

Total length 32 to 38 m.m.; one measures 35·6, width of its head 8, of prothorax 10, of shoulders 10·2, length of elytra 21 m.m.

Jaws almost equal. Upper lip straight in front or obliquely truncated, the left rounded corner being often a little more projecting. Lappets of the antennæ generally graduated, the first very short, the succeeding to the fifth gradually longer. Clypeus entirely punctated and covered with short hair; supra-ocular ridges low, distinctly truncated in front and with the carina round the concave space well developed. The horn consists of an elongated ridge, with a small tubercle on either side; it is slightly elevated at the anterior end and with an almost vertical slope. The frontal carinæ are rather short, terminating with elongated distinct points, connected by another carina, from which the margin of the clypeus is almost vertical. The marginal processes of the clypeus are far distant, situated above the edges of the upper lip; they are short, pointed, in some specimens apparently almost equal, in others the left one is distinctly larger. They exactly resemble those

of *cancrus*, and each also has on its lower side a small tubercle. From both the marginal processes and the frontal tubercles generally proceed a few irregular low ridges to the middle of each supra-ocular ridge.

Prothorax moderately convex, smooth, generally with a very faint indication of a central groove; lateral scar rounded and, like the entire lateral margins, very finely punctated; sometimes there are one or two dots at the anterior corner.

Scutellum smooth, convex, sometimes with a minute punctation along the lateral edges. Shoulders well prominent, and each with a group of short brown hair, considerably more developed than in *Cantoris*. Furrows of the elytra finely punctated; all the ridges smooth.

Tongue tricarinate. Lower lip large, mostly smooth, without any scars; its branches densely punctated. Prosternal carina sharp, long. Waist with elongated diverging scars, sometimes with a short, central, basal groove. Metasternum smooth, its hinder corners sparsely and very finely punctated; sides densely punctated and hairy. Abdominal segments smooth, with linear oblique scars. Middle and hind tibiæ rather thinly hairy; lower sides of prothorax more distinctly so; last abdominal segment at the end provided with conspicuously elongated brown hair.

*Hab.*—Andamans near Port Blair; Camorta and Katchal islands of the Nicobar group; common. I found one specimen in the Vienna collection, together with *Mastachilus politus*, labelled 'Madras,' 'Novara.' It was most likely obtained from some officer who had been at the Andamans, or from the Museum.

23. *BASILIANUS SIKKIMENSIS*, n. sp.

Total length 33, width of head 7.1, of prothorax or of shoulders 10, length of elytra 19 m.m.

This species resembles *B. Cantoris* in size and general character of form and convexity of the body. The jaws are subequal; the upper lip obliquely truncated, almost quite straight, with obtuse corners. The three first lappets of the antennæ much shorter than the three terminal ones, the two sets being among themselves almost equal. Clypeus entirely punctated and very similar to that of *B. Andamanensis*, but the horn is a little shorter, the frontal carinæ include a slightly smaller semilunar space, and the frontal processes of the clypeus are almost shorter, both pointed, nearly quite equal in size, and each is on the outer side accompanied by a short longitudinal carina, which, however, does not extend to the supra-ocular ridge.

Prothorax moderately convex, with a very faint trace of a median groove; lateral scar rather large, pitted all round, the dots or pits being almost continuous to the anterior corner and here again rather dense; along the lateral margins densely and very finely punctated.

Scutellum smooth. Shoulders moderately developed, on the anterior slope finely punctated and shortly hairy. Furrows of the elytra above distinctly punctated, laterally broader and with transverse bacilli, the seventh and eighth furrow are broadest.

Tongue rather narrow, punctated, thinly tricarinate, laterally concave. Lower lip convex, with sparse punctation, its branches densely punctated. Waist, below, with diverging elongated, dull scars. Metasternum smooth, its hinder corners coarsely punctated, and the narrow sloping sides along the elytræ very finely punctated and hairy.

Abdominal segments with elongated, finely punctated lateral scars, broadest on the first few segments, linear on the penultimate and obsolete on the last. Lower side of prothorax the middle and hind tibiæ with short and rather thinly distributed hairs.

*Hab.*—Sikkim. I obtained a single specimen at about 1500 feet, some two miles east of Pankabari.

The species is intermediate between *cancerus* and *Andamanensis*; with the latter it agrees in the shape and structure of the head, with the former in the transverse costulation of the lateral furrows of the elytra, but in *cancerus* this costulation is still stronger.

NOTE ON SOME ANDAMANESE AND NICOBARESE REPTILES, WITH THE DESCRIPTION OF THREE NEW SPECIES OF LIZARDS,—by DR. F. STOLICZKA.

[Received and read 7th May, 1873.]

I have given a list of the Reptiles and Amphibians, known from these islands, in a former paper,—Journal A. S. B., Vol. xxxix, pt. II, 1870, pp. 136-138 etc.; having, however, lately had an opportunity of visiting all the Nicobar islands (excluding Little Nicobar and Pulo Milu), and the Andamans, including the Cocos and Preparis, I am in a position to add a little information about some of the species. Our visit\* was chiefly from an ornithological point of view, and as it fell already in the hot season (March), the time was very unfavorable for collecting reptiles, at least on the northern group of islands, which at this season are much drier than the southern Nicobars.

We found the following species generally distributed over nearly all the islands which we visited:—*Tropidonotus quincunctiatus*, *Lycodon aulicus*, *Dendrophis pictus*,† *Cerberus rhynchops* and *Trimeresurus Cantoria*. Spe-

\* In company with Mr. A. O. Humo, C. B., Messrs. Ball and Wood-Mason.

† In the July number of the Berlin Monatsbericht (for 1872, p. 563), just received, I observe that Dr. Peters describes a *Dendrophis terrificus*, with 13 rows of scales; it is very closely allied to *Dendrophis caudolineatus*, (compare ante p. 123), but differs in coloration.

cimens of *D. pictus* from the Nicobars generally are as soberly coloured as the continental form, while those from the Andamans are very much brighter, but the typical form again occurs on the Cocos.\* The rare *Trimeresurus porphyraceus* was found to be common on the Preparis island; it grows to nearly four feet. Of lizards the most common were *Euprepes carinatus*, *Hinulia maculata*, *Oxyrodactylus rubidus*, *Tiaris subcristata* and *Hydrosaurus salvator*. Of Batrachians *Bufo melanostictus* is very common.

*Euprepes macrotis*, described by Steindachner, was observed in Galthea Bay on Great Nicobar (Sambelong).

The large Andaman form of *Euprepes carinatus*† is not specifically distinct from the common type. I met with similarly large specimens (up to 20 inches) on the Coco islands. Most of those which I obtained there have thirty rows of scales round the body, and each scale has seven keels, the three median ones being strong and distant from each other, the two laterals on either side short, thin and sometimes scarcely traceable. Some specimens have the anterior frontal in contact with the rostral as well as with the vertical, a short process of the anterior frontal separating the two posterior. The specimens were apparently in breeding dress. The whole sides of the head, neck and belly were vermilion or bright cinnabar red, the anterior extremities and the back were also strongly tinged with red. The entire sides of the body and of the tail and the extremities had numerous large, irregular white and black spots intermixed, giving the lizard quite a different appearance from the ordinary type. The white spots were most numerous along the edges of the back, but there is no marked white band present.

#### PHELSUMA ANDAMANENSE, Blyth.

Comp. Stoliczka in J. A. S. B., 1870, Vol. xxxix, pt. II, p. 162, and Anderson in P. Z. S. Lond. for 1871, p. 160.

The following is a complete description of this remarkable lizard.

Body rather stout, moderately depressed, tail tapering, narrow at the base, with transverse contractions at distances. Snout almost conically elongated, rostral broader than high, just reaching the upper surface of the head; nostrils lateral, in the hinder edge of an enlarged, somewhat swollen shield, followed by a slightly smaller one; on the upper side the two nasals are separated by two (rarely by three) shields. Head, body and limbs, above and at the sides, covered with equal granular scales, or rather shields,

\* It is perhaps due to their more isolated situation that the Cocos and neighbouring islands, (Preparis, Narkondam, Barren island), have several Nicobar forms which on the Andamans are apparently wanting. We found *Carpophaga bicolor* common, *Calanus Nicobaricus* is said to have occurred on the Cocos, and *Megapodius* is found on Table island. Among shells I got numerous *Helicinae*, exactly like *H. Dunkeri*, *Bulinus Nicobaricus*, var., *Cyclophorus*, like *C. nicobaricus*, &c.

† J. A. S. B., vol. xxxix, Pt. II., p. 170.

becoming on the tail more depressed, scale-like, and intermixed with a few larger ones. Eye of moderate size, with an almost round pupil; it is surrounded with small granules. Ear-opening ovately rounded, equal to about one third of the longer diameter of the eye. Eight to ten low upper labials. Lower rostral large, somewhat produced and contracted behind. Nine to ten lower labials, the first two are largest, not in contact, the succeeding gradually decrease in size. None of the chinshields are particularly enlarged, and they vary in arrangement in different specimens. The scales of the belly are roundly hexagonal, across the middle in twenty-one to twenty-three longitudinal, alternating series.

The adult male has thirty-one femoral pores, in an uninterrupted series, angularly ascending in the centre. The female has a similar row of enlarged but not perforated shields. Præanal shields not enlarged. A small slit exists on either side in the postanal margin. On the tail the subcaudals become a short distance from the anus enlarged, single, only occasionally broken up into smaller shields. The inner toes on both the fore- and hind-limbs are very short, almost rudimentary; the fourth toe is longest, and all have their front edges rounded.

The general colour in males is grass- or bluish-green, subject to very great changes during the life of the lizard; head and neck with yellowish orange spots and stripes, among which one from behind the eye, one or two across the occiput, and one along the middle of the neck are most conspicuous. The anterior part of the body is on the upper side marked with small, oval, orange spots, on the posterior part these spots are somewhat larger, encircled with yellow, and sometimes partly confluent. All these orange spots often assume during life a strong reddish tint. Tail generally uniform bluish green. The lower side is uniform yellow or yellowish white.

The females are more soberly coloured, particularly when not full grown, in which case the orange spots are much less distinct, and sometimes almost obsolete.

The lower sides of the toes, especially towards their terminations, are silvery grey.

The usual size of full grown males is five inches, head and body being two; specimens of six inches are great rarities. The females are generally somewhat smaller than the males.

The species is not uncommon about Port Blair. I found a few on old trunks of trees (between epiphytes) on Mt. Harriet. They generally hide themselves under the bark of trees, but also often feed on the ground. Mr. Wood-Mason about a year ago brought a large number of specimens from the vicinity of Port Blair. I have not seen specimens from any of the other islands.

## GYMNODACTYLUS WICKSI, n. sp.

A small species, resembling in general character some of those described by Jerdon and Beddome from South India. The body is moderately slender and depressed, covered with very small, keeled tubercles which have the appearance of pointed granules; on the back there are numerous larger, but similarly formed, tubercles interspersed, and on the side of the belly these larger tubercles become distinctly spinulose; tail verticillate, with similar spinules, exactly as in *Hemidactylus frenatus*. On the snout the sharp granules are, as usually, somewhat larger than on the top of the head, but none are enlarged above the labials. The rostral reaches to the upper side of the snout, and is followed by two small shields, separated by a still smaller pentagonal azygos, the upper angle of which fits into a posterior emargination of the rostral. The nostril is lateral and directed somewhat backwards, it lies immediately behind the rostral, and is followed by two slightly enlarged and diverging shields, the anterior angles of which nearly touch the rostral, thus almost entirely isolating the nasal opening from the first labial and the shield behind the rostral. No particularly enlarged scales round the eye. Seven upper and lower labials, the first are in each case the longest, the succeeding gradually decrease in size, the last are very small; all are very low. Ear opening forms an oval, oblique slit, its distance from the eye is slightly less than that from the eye to the end of snout. Lower rostral large, obtusely pointed behind, followed on each side by a slightly enlarged shield, separated by smaller ones; there are no particularly enlarged chin-shields. The scales on the throat and anterior breast are finely keeled; those on the belly hexagonal and across the middle in about nineteen longitudinal series. Præ- or post-anals not enlarged. Sub-caudals along the middle line very little larger than the other shields covering the lower side. Reproduced portions of the tail are uniformly scaly, without enlarged tubercles.

The male has four præ-anal pores, situated between the femora in a shallow transverse depression, and quite separate from these are four or five femoral pores placed at the hinder lower edge of the femur, somewhat nearer to the hip than to the knee. Toes long and slender; basal portion with three or four transverse, squarish plates, the last the largest; terminal phalanges very much narrower.

*Colour.* Above, powdered brownish grey and white, a series of whitish, almost continuous spots along the middle of the back, extending on to the tail. There are six or seven of these spots from the nape to the base of the tail, and each of them is edged anteriorly and laterally with black, sometimes the lateral black edges develop into elongated spots and are most distinct. On the tail the white spots are less distinctly developed, but the transverse black margins well marked. The sides of the body, of the tail

and the upper side of the limbs is thinly checkered with black ; the enlarged spinules and tubercles are all pure white. There is a dark streak between the snout and the eye, posteriorly there are three dark lines, one going to the occiput, the second to the ear, the third to the angle of the mouth ; and generally there are one or two more below the eye, giving the side of the head quite an ornamental appearance. Labials spotted with white. Chin and throat powdered with brownish dusky, remainder of lower side uniform pale, more or less distinctly tinged with fleshy ; in males more markedly so than in females. In the very young lizard (about one inch long) the lateral black spots along the back, and the median black line behind the eye are most distinctly marked, in other respects it does not differ from the adult.

*Hab.*—Preparis Island. I obtained five specimens, two apparently adult males and two females, and one young ; all were found on the ground between old decaying vegetable matter. One of the largest specimens with perfect tail, measures : head and body 1.13, tail 1.37 = 2.5 inches. The length of the hind limb equals the distance from the shoulder to the groin.

I have great pleasure in connecting with this very interesting new species the name of the able Commander of the "Scotia," Capt. G. W. Wicks, who piloted us most skilfully through the labyrinth of small and large islands.

MOCOA MACROTYMPANUM, n. sp.

Body moderately slender, head flattened above, muzzle rather attenuated and prolonged. Anterior frontal in contact with the rostral, separating the two elongated nasals, and posteriorly just touching the vertical, which is rather shortly, obtusely angular in front, and gradually attenuated behind. Four enlarged supraciliaries, preceded and followed by a smaller shield. The two anterior occipitals (? accidentally) united, the median one roundly angular in front, attenuated and contracted behind, the two laterals narrow, in contact with each other behind the median shield. Four pairs of scales behind the occipitals enlarged, occupying the whole width of the neck. Seven upper labials, the fifth under the orbit, six narrow lower labials. First chin-shield single, the second is a pair in contact, third separated by a small shield, fourth pair somewhat smaller. Lower eyelid with a transparent disk. Ear opening very large, rounded, with a perfectly smooth edge all round, the tympanum being distinctly visible. Body in the middle surrounded by twenty-two longitudinal series of smooth scales, six series being on the back ; they are slightly larger than those at the sides. About fifty-two scales along the edge of the lower side, counted between the fore and hind limbs. A pair of moderately enlarged præ-anal shields. Median row of sub-caudals slightly enlarged. Limbs proportionately developed, with the toes very slender.



Head above brown, paler on the muzzle; three longitudinal white bands along the body,—one along the middle, originating between the eyes, and two along the sides, beginning on the supraciliary edges;—they are separated, above, by two somewhat broader brown bands, each being lighter coloured along the centre, and bounded at the sides by a similar brown band which is, however, darkest along the centre. The median dorsal white band becomes obsolete at the root of the tail, the two lateral ones continue on it, and unite when approaching the tip. Labials and sides of head brownish, spotted with white. Lower portion of the sides and the entire lower surface livid carneous, most distinctly so, and tinged with bright orange, on the lower belly and on the tail, which is also on the upper side carneous, with a few white dots at the side of the base, and irregularly marked with pale brown on the lower surface. Limbs, above, with very close longitudinal brown lines, toes all distinctly powdered with pure white.

Total length four inches, the head and body being 1·8, the length of the fore limb is equal to the distance between the shoulder and the angle of the mouth, or one-third of the distance between the axil and the groin; the length of the hind limb is one-half of the same distance.

*Hab.*—South Andaman. The single specimen was obtained on a sandy beach in Macpherson's Straits.

#### TIARIS HUMET, n. sp.

A larger species than *T. subcristata*, and like this one with the crest interrupted above the shoulders, but the crest itself is very much more developed. The nuchal part is considerably higher than the dorsal one, on its convex edge it is composed of 13-15 lobes; the dorsal portion continues on to the tail, disappearing after about one-fourth of its length. None of the scales are at the lateral bases of the crest particularly enlarged. All scales on the body are distinctly and sharply keeled.

Head shelving and concave above; snout with a few enlarged scales along the centre; supraciliary edge sharp, its posterior end is separated by a short groove from a small tubercle following it. Two groups of enlarged conical scales on the upper side of the occiput; several (3-4) enlarged scales on the side of the head above the tympanum which is hardened near the centre, and about as large as the eye. Below the tympanum no scales are enlarged. Eight or nine upper labials and seven or eight lower labials; the scales adjoining the former are enlarged, and there is also a conspicuous row of slightly enlarged scales below the eye. A row of enlarged scales is separated from the lower labials by one of small scales. Scales on the side of the neck and body very small, arranged in somewhat irregular transverse series, with scattered larger ones intermixed; on the tail they gradually increase in size, but within a short distance of its base still have some.

larger ones intermixed. On the limbs the scales are much larger, two or three on the upper side of the femora particularly so. Gular pouch and fold covered with small scales, which become larger on the lower belly than on its sides. The two rows of sub-caudals are slightly larger and more pointed than the shields on the upper side of the tail.

General coloration greenish olive, on the top of the head brownish; sides of the entire body more or less distinctly and rather densely reticulated and spotted with black and yellow; sides of head and neck and the gular sac tinged with purplish blue, labials spotted with blue. Chin mostly yellow; belly whitish, without spots. Tail brownish above, paler below, irregularly and indistinctly spotted with dusky.

Total length of one specimen 16 inches, of which head and body are 4·4 and the tail 11·6 inch. The fore limb when laid backwards extends beyond the groin, or almost to the præanal edge, and the hind limb when laid forwards fully reaches the anterior edge of the eye.

The above noticed characters readily separate the Nicobar species from *T. dilophus*, or *T. tuberculatus*, lately (P. Z. S. 1872, p. 533, pl. xxxviii) described by Dr. Günther from the East Indian Archipelago.

I obtained only two specimens (male and female) on the Nicobar island Tillingchang, but the species did not seem to be rare.

#### DIBAMUS NICOBARICUS, (Fitz.).

*Rhinophidion nicobaricum*, Fitz., Steindachner, Novara Rept. p. 52 and *Typhloscinus nicobaricus*, ibidem, p. 94.

I have two specimens for examination, one a male\* and the other a female (known from dissection).

The male is six inches of which the tail is 0·9 inch; there are 24 longitudinal rows of scales round the body, and 48 transverse rows along the tail. The two extremities are on either side somewhat in front of the anus, towards which they converge; they are depressed, each lying in an oblique cavity, the intermediate space of the sacral region being flat, triangular and pointed above the anus. Each extremity is fully as long as the whole head,† it is covered on the upper side by three longitudinal rows of scales, narrowing towards the end which is occupied by a large, flat, nail-like scale.

The body of the female is somewhat stouter; it measures 5·5 inches, of which the tail is only 0·5 inch. The body is again surrounded by 24 longitudinal and the tail by 34 transverse rows of scales. On each side in front of the anus is an enlarged scale, separated by three small scales from the anal edge, and just in the place where the extremity in the male originates;

\* This is in the Indian Museum and I am indebted to Dr. Anderson for the opportunity of examining it.

† In *D. Novæ-Guinæ* the extremity is only as long as the head is broad.

this large scale covers a small opening, in which internally a rather strong muscle terminates; the muscle is most probably emissible and retractile at the will of the animal.

All other characters are common to both sexes. The upper labial is separated from the rostral by a distinct groove. The shields are dark brown, almost blackish, with paler edges; paler below. The shields on the head are yellowish and there are occasionally yellowish spots on the chin and throat, or on the lower side of the tail.

As compared with *Typhloscincus Martensii*, Peters, the snout of the Nicobar species is narrower, the head posteriorly broader, the eyes, although covered by skin, distinctly traceable, all points to which Steindachner drew attention when comparing the two, but the shields of the head, the number of scales round the body and on the tail are in both species quite the same. There is in *T. Martensii* also an enlarged scale above the anal edge, but it is nearer to it than in the Nicobar species. Still, if it were not for Peters' distinct statement, that out of three specimens of *T. Martensii* two are males, and one a female, both without any trace of extremities, I should have considered the specific distinction of the *D. Nicobaricus* from *T. Martensii* somewhat doubtful. The coincidence is certainly remarkable.

*Dibamus* was characterized by Dumeril and Bibron (Erpet. gen. v. p. 833) from two New-Guinean specimens, sent to them by Prof. Schlegel. Both specimens were apparently males, but Schlegel\* says that these only possess a pair of posterior extremities, the females having none. And this is strictly in accordance with the observation made on the two Nicobar specimens.

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DESCRIPTIONS OF TWO NEW SPECIES OF INDIAN LANDSHELLS,  
by DR. F. STOLICZKA.

[Received 7th May, 1873.]

The following descriptions have been drawn up with the view of supplementing the figures of them which are to be given by Mr. Theobald in the 'Conchologia Indica.' The first species is from the Shan-states, and was collected, several years ago, by Mr. Fodden; and the second was given to me by Mr. Foote who obtained it in the cotton soil district near Bolgaom, when on his geological tour.

\* Comp. Berlin Akad. Monatsberichte for 1864, p. 271.

## PLECTOPYLIS SHANENSIS, n. sp.

*Pl. testa planorbulari, pallide fusca, apicē minutissime exserto, pallido; anfractibus 6½, angustis, sutura indistincte marginata junctis, primis 2½ ad tribus minute rugulosis, cæteris transversim oblique striatis atque concentricè obsolete striolatis, ultimo ad peripheriam subrotundato, infrâ paululum angustiore, ad aperturam modicè deflexo; umbilico spatioso, anfractus omnes suturâ distincte marginatâ separatos exhibente; apertura angulum circiter 55° attinentem cum axi formante, peristomate undique expansiusculo atque incrassato, margaritaceo lutescente, circumdata, ad utramque terminationem labii subangulati profunde incisa; labio plicis tribus distinctis instructo, plica mediana crassissima, ea atque infera multo tenuiore usque ad peristoma extensis, tertia interposita a margine remote evanescente, sed usque ad laminam internam verticalem, circiter tertiam partem unius circuitus a margine aperturali distantem, extensa; ultimo anfractu intus supra laminam verticalem antice plicis sex crassiusculis, postice plicis decem brevioribus atque tenuioribus instructo.*

*Diam. maj. 21·5, min. 17, alt. 6·5; diam. aut alt. aperturæ 7·5 m.m. Dimensiones speciminis secundi minoris sunt: 18·5, 15, 5·8, 6·6 m.m.*

*Hab.*—Provinciam Burmanam 'Shan-states' dictam.

This *Plectopylis* is readily distinguished from its allies by the presence of three labial plicæ, the strongest being in the middle and extending, like the lower thin one, to the edge of the lip, while the intermediate one disappears before it reaches the aperture, but it is the only one which extends to the internal almost vertical lamina. This last is superseded anteriorly by six stronger and posteriorly by ten thinner and shorter folds, but there is no corresponding lamina present on the inner side of the last whorl.

In external shape and character of volution the species is almost identical with *P. repercussa*, except that in this latter all the whorls are transversely striated on the upper side, and the last at the aperture a little more deflected, the umbilicus also appears to be a little wider, and not only the plicæ at the mouth but also the internal laminæ are totally different in *repercussa*; in this one there are two internal laminæ on the inner lip one behind the other, and one on the outer lip projecting in the space bounded by the two others.

## TRACHIA FOOTEI, n. sp.

*Trach. testa albida, orbiculata, supra deplanata, infra inflata, versus medium angustata, perspective modicè umbilicata, undique dense granulifera; anfractibus 4 ad 4·5, gradatim accrescentibus, primis duobus aut tribus convexiusculis, transversim striatis, cæteris magis deplanatis, transversim costulis inæqualibus et obliquis ornatis, ultimo ad peripheriam valde carinato, costulis in carina evanescentibus, ad aperturam valde descendente atque fero*

*omnino deflexo; basi circa umbilicum rotundate subangulata, similiter costulata, costulis usque ad peripheriam extensis; apertura fere horizontaliter deflexa, transversim rotundate elliptica, margine dilatato fere undique libero, ad angulum umbilici angustissime adnato, circumdata. Diam. maj. 13·3, d. min. 11·2, altitudo totius testæ 6; altitudo apert. cum peristomate 5·5, ejusdem latitudo 6·8 m.m.*

*Hab.*—Belgaom, India occidentali.

The present species has to be placed in close proximity to *T. crassicostata*, and is as closely allied to it as this is to *T. fallaciosa*. It differs very markedly from *crassicostata* by its more distinctly orbicular and depressedly planorboid shape, by a well marked, smoother and thinner, peripheral keel on the last whorl, by a more inflated and towards the middle more contracted base, it being angular round the umbilicus, and by a considerably more deflected aperture.

In a former paper\* I expressed a doubt about *H. fallaciosa*, *ruginosa*, and *nilghirica* belonging to the genus *Trachia*, as originally proposed by Albers. I observe, however, in well preserved specimens, that all of them possess the peculiar granular structure which is so characteristic of *Trachia*. *T. crassicostata* and *Fbotei* must now be added to the list of these closely allied Western Indian species.

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ON RHOPALORHYNCHIUS KRÖYERI, A NEW GENUS AND SPECIES OF PYCNOGONIDA,—by JAMES WOOD-MASON, of Queen's College, Oxford.

[Received and read May 7th, 1873.]

(With plate XIII.)

Much difference of opinion has prevailed with regard to the systematic position of the *Pycnogonida*, as to whether they should be classed with the Crustacea or with the Arachnida. By one set of naturalists, including Johnston, Milne-Edwards, Quatrefages, Kröyer, and Dana, they have been placed with the Crustacea; by another—including Latreille, Erichson, Gerstaecker and Huxley who separates them, as well as the Tardigrada and Pentastomida, from the typical Arachnida (Spiders, Mites and Ticks) as an aberrant order,—with the Arachnida. Dr. Anton Dohrn† who has recently studied the embryology of these animals finds that they are in no way related to the Arachnida, that they resemble the Crustacea in having a naupliiform first developmental stage, but that from this point the course of development ceases to exhibit anything in common with that of the Crustacea; under these circumstances I have thought it better to call the *cheli-*

\* Journ. A. S. B., Vol. XL, Part II, p. 224.

† Jenaische Zeitschrift, 1869.

*ceræ, palps, and accessory legs* (= mandibles, and 1st and 2nd pairs of maxillæ of Kröyer) of those who range the *Pycnogonida* with the *Arachnida*, *the first, second and third pairs of cephalic appendages* respectively, thus avoiding the use of terms implying affinities and homologies that may not in reality exist.

RHOPALORHYNCHUS,\* gen. nov. Wood-Mason.

Corpus lineare, gracillimum, annulis thoracis perdistinctis, cylindricis, utrimque dilatatis, processibusque lateralibus magnis, obconicis. *Rostrum* uniarticulatum, elongatissimum (corporis longitudinem pæne æquans), clavatum, ore triradiato. *Annulus oculiger* in collum vix coarctatus. *Appendices cephalicæ primi paris* absunt. *App. ceph. secundi paris* tenuissimæ, rostro longiores, novemarticulatæ, articulis secundo tertioque elongatis; *app. ceph. tertii paris* paulo longiores, ex decem confectæ articulis,—quorum tertius quintusque sunt elongatissimi, terminalesque quatuor prehensiles ac margine interiori serrati ciliatique—in utroque adsunt sexu; appendices utriusque paris, secundi ad tertium, tertii ad quartum articulum, sunt geniculatæ. *Tuberculus oculiger* in postica annuli parte est situs. *Pedes* gracillimi, inermes, equales, corpore (rostro incluso) duplo longiores, unguibus auxiliaribus armati sunt nullis. *Abdomen* uniarticulatum, obtuse-conicam, perbreve, vix distinguendum.

RHOPALORHYNCHUS KRÖYERI, n. sp.

Body linear, smooth. The rostrum is almost as long as the rest of the body, moveably articulated to the middle of the anterior end of the oculigerous somite, slender and filiform nearly to its middle whence it expands and finally narrows to its obtuse extremity; when examined in profile, the convex upper contour of the expanded portion is seen to carry two minute forwardly-directed spines, the one behind the other in the middle line. The mouth is situated at the extremity of the rostrum and has the form of a triradiate slit, the three slits being so disposed that a circle described from the point in which they meet so as to pass through their free extremities would be by them divided into three equal sectors. The ocular tubercle is erect, occupies the posterior half of the segment on which it is placed, and has the form of a short cylinder surmounted by a minute cone, the eyes being situated partly on the cylinder and partly on the cone at points corresponding, as usual, to the extremities of the arms of a St. Andrew's cross. A very distinct crescentic suture, bounding the base of the ocular tubercle posteriorly and curving forwards and outwards so that, if produced far enough, it would pass

\* ῥόπαλον, clava; ῥύγχος, rostrum.

out just in front of the first pair of legs, divides the oculigerous from the first thoracic somite.

The *cephalic appendages of the first pair* are absent. Those of the *second pair* are about  $1\frac{1}{2}$  times as long as the rostrum with which they lie in the same horizontal line, being articulated one on each side of it to the anterior end of the oculigerous somite, are filiform, excessively slender, and composed of nine joints. The first joint is subglobular, being nearly as broad as long, much broader than any of the succeeding joints; the second greatly elongated and slightly expanded at the apex; the third is very short and slightly curved; the fourth is greatly elongated, but not so much so as the second; the fifth is shorter than either of the four equal terminal joints which, together with the fifth and the distal half of the fourth, are fringed with short and very delicate cilia. Those of the *third pair* are also extremely slender, are articulated, a little posteriorly and internally to the second pair, to minute processes springing from the ventral arc of the oculigerous somite and meeting in the middle line. They are composed of ten joints, of which the first is minute, the two next equal and cylindrical, the third greatly elongated and just perceptibly expanded at the apical end; the fourth short, scarcely longer than the second of the two basal joints, and curved; the fifth is likewise greatly elongated, but more expanded at the apex and longer than the third; the four terminal joints are short, slightly decrease in length from the first to the last which comes suddenly to a subacute incurved point forming a sort of claw, are curved, fringed on their inner and concave margins with cilia and minute spinules, and capable of being coiled tightly together so as to form a prehensile organ.

Both pairs of appendages are elbowed at a short joint, intercalated between two long ones, *viz.*, the second pair between the 2nd and 4th, the third between the 3rd and 5th joints.

In many other species the terminal joints of the third pair of cephalic appendages (*pedes accessorii*) will probably be found to be similarly modified as a prehensile organ; an examination of O. F. Müller's faithful figures of *Nymphon grossipes*, Fabr. in the *Zoologica Danica*\* would, in fact, alone suffice to show the existence of such a modification in that species, even if Kröyer† had not described it in his diagnoses of the genera *Nymphon* and *Zetes*, without, however, offering any interpretation of the structure.

The *oculigerous somite* has its anterior margin straight, and is but faintly constricted in front of the eye-tubercle.

The *first thoracic somite*, if its distinctness from the oculigerous somite be admitted, is very short. Of the remaining somites, the second and third are subequal, the former being if anything the longer; are as perfectly cylindrical,

\* Op. cit., pl. cxix, figs. 5 et 8.

† Naturhist. Tidssk., 1844, pp. 108 et 116.





tangle of delicate, filamentous algæ so closely resembling the animal in point of colour and form, that the latter was with difficulty distinguishable.

In conclusion, I dedicate the first species of *Pycnogonida* hitherto discovered in these seas to the memory of the illustrious Danish naturalist whose name is so indissolubly connected with the history both of the *Pycnogonida* and of the lower Crustacea.

### Explanation of Plate XIII.

- Fig. 1. *Rhopalorhynchus Kröyeri*, nat. size.  
 Fig. 2. The same greatly enlarged.  
 Fig. 3. A cephalic appendage of the second pair, greatly enlarged.  
 Fig. 4. " " " " third " " "  
 Fig. 5. Rostrum seen from the side ..... " "  
*a* = mouth.

ALGÆ\* COLLECTED BY MR. S. KURZ IN ARRACAN AND BRITISH BURMA,  
 DETERMINED AND SYSTEMATICALLY ARRANGED by DR. G. ZELLER,  
*High Councillor of Finance in Stuttgart.*

(Communicated by Mr. Kurz.)

[Received 3rd May; read 4th June, 1873.]

### DIATOMACEÆ.†

#### \*1. *PODOSIRA KURZII*, Z., n. sp.

Stipiti brevi cylindrico adnata; cellulis sphaericis, v. oblongis et diametro paulo longioribus; 1/175 ad 1/150 lin. crassis; 2 et pluribus isthmo brevi concatenatis, lævibus, valvulis ad commissuræ margines nodulis binis minutis instructis. Arracan, Akyab, in rupibus marinis submersis (3280, 3283.)

### CHIROOCOCCACEÆ.

#### \*2. *CHIROOCOCCUS MINOR*, Ng. (*Protococcus minor*, Kg.).

Pegu, Elephant-point, in rhizophoretis ad corticem *Sonneratiæ apetalæ*. (3277).

\* The arrangement is according to Rabenhorst's *Flora Europæa Algarum*, that of the sea weeds according to Kützing's *Species Algarum*. The numbers within brackets refer to Mr. Kurz's collections. Those species marked by an asterisk are new additions to Burmese phycology (see a paper on Burmese Algæ by the late Dr. G. von Martens, Journ. A. S. B., Vol. XL., 1872, p. 461 sq.)

† The diatoms from Burmah (about 60 or more species) are not yet distributed; Dr. L. Rabenhorst of Dresden has, however, been kind enough to undertake the determination of them. (S. Kurz.)

\*3. *CHROOCOCCUS INDICUS*, Z., n. sp.

Strato gelatinoso, tenui, pallide fusco; cellulis singulis solitariis, oblongis v. globosis, 1/700—1/300 lin. crassis, virscentibus; tegumento hyalino, vix conspicuo, cytiodermate achromatico, cytoplasmate granuloso. In stagno silvatico ditionis Prome (3151).

\*4. *CHROOCOCCUS GRANULOSUS*, Z., n. sp.

Strato gelatinoso, granuloso, aurantiaco; cellulis 4-12 et pluribus in familiis circiter 1/100 lin. crassis associatis, 1/500—1/300 lin. crassis, v. singulis ad 1/160 lin. crassis, globosis v. angulosis; tegumento tenerrimo, hyalino; cytiodermate hyalino, in cellulis junioribus vix conspicuo, in adultioribus crassiusculo; cytoplasmate aureo-fusco, rarius viridi. Pegu, in valli alluviali fluminis Irrawaddi versus Thabyægon, in rivulo exsiccato (3223).

\*5. *APHANOCAPSA ALBIDA*, Z., n. sp.

Thallo tenui, membranaceo, amorpho, sordide albido; cellulis globosis, 1/700—1/600 lin. crassis, nunc solitariis, nunc seriatis aut acervatis; tegumentis diffuentibus; cytoplasmate homogæneo, pallide aerugineo. Arracan, Akyab, in stagnis salsis putrescentibus fluitans (3284).

\*6. *SYNECHOCOCCUS FUSCUS*, Z., n. sp.

Cellulis singulis, interdum duabus v. tribus longitudinaliter seriatis ellipticis, utraque fine rotundatis, 1/100 lin. longis, 1/250 lin. crassis; cytoplasmate fusco v. lutescente, homogæneo. Pegu, in montibus Yomah dictis secus rivulum Thit-Kouk (Pazwoondoung) in limo arenoso (3258).

*LEPTOTHIRICHEÆ.*\*7. *LEPTOTHRIX OCHRACEA*, Kg.

Pegu, in variis locis præsertim in montibus Yoma frequentissime e fissuris rupium humidarum protrudens et massas 1—1½ poll. crassas ochraceas formans. In collectione hæcce prostant stationes: Kadeng-choung ad Natmadhee (3232/a); Thayet-choung inter Kya-Eng (Eng = laculus) et Phounggyee, (3277); Wha-choung (choung = rivulus, fluvius, etc.) in stagno sylvatico (3237/a); Mui-how in montibus (Yomae meridionalis) in fonte (3240).

\*8. *HYPHEOTHRIX ÆRUGINEA*, Rabenh. (*Leptothrix*, Kg.).

Pegu, Phounggyee, ad ripas laculi in limo (3186/a) var. *subtorulosa*, Z. articulis ad genicula interdum parum contractis. Pegu, Kenbatee-choung in fonte ad vicum (3131).

\*9. *HYPHEOTHRIX CALCICOLA*, Ag. b. *muralis* (*Leptothrix muralis*, Kg.)

Pegu, Henzadah, ad muros ædis cujusdam vetustæ lateritiæ. (3167).

\*10. *HYPHEOTHRIX SUBTILISSIMA*, Rabenh. (*Leptothrix*, Kg.).

Pegu, in muris humidis muscosis cisternæ in vico Tharawa, in vicinitate oppidi Henzadah (3214/a, 3223/a, 3223/b).

\*11. *HYPHEOTHRIX VIRIDULA*, Z., n. sp.

Strato tenui, membranaceo, obscure ærugineo-viridi; filis parum curvatis, dense intricatis, ad 1/750 lin. crassis, apicem versus attenuatis, ærugineis, obsolete articulatis, interdum torulosus; articulis diametro parum v. ad duplum longioribus; vaginis delicatissimis, arctis. Pegu, in palude prope Wanet, in limo et in plantis aquaticis. (3238).

*OSCILLARIEÆ.*

\*12. *OSCILLARIA ANTILLARUM*, Kg.

Arracan, Akyab, in stagnis subsalsis. (3216).

\*13. *OSCILLARIA ANTLIARIA*, Juerg. a *physodes*. Ibidem (3216).

\*14. *OSCILLARIA BREVIS*, Kg.

Pegu, Kadeng-choung ad Natmadhee. (3134).

\*15. *OSCILLARIA CHALYBEA* Mert., var. *Indica*, Z.

Strato obscure chalybeo, filis tantummodo 1/400—1/375 lin. crassis. Pegu, in locis humidis limosis viæ inter Kyauzoo et Wachoung (3185).

\*16. *OSCILLARIA GRATELOUPII*, Bory.

Pegu, Elephant-point, in aquis dulcibus (3275).

\*17. *OSCILLARIA SANCTA*, Kg.

Pegu, Tharawa, non procul ab Henzada, in muris humidis cisternæ (3214/a, 3223).

\*18. *OSCILLARIA VIOLACEA*, Wallr. (*O. fenestralis*, Kg.)

Rangoon in limo aquæ dulcis. (3208).

\*19. *OSCILLARIA VIRIDULA*, Z., n. sp.

Strato membranaceo, viridi-ærugineo, longe radiante; filis læte ærugineis, rectis, 1/500—1/450 lin. crassis, apice ad dimidium attenuatis et leviter curvatis, subtilissime granulatis; articulis obsoletis, diametro duplo brevioribus. (*O. Neapolitanæ* proxima). Rangoon, in limo aquæ dulcis (3206).

\*20. *PHORMIDIUM ARENARIUM*, Rabenh. (*Ph. thinoderma*, Kg.).

Arracan, Akyab in limo aquæ subsalsæ (3220, 3286/a).

\*21. *PHORMIDIUM INUNDATUM*, Kg.

Pegu, Tharawa, prope Henzadah, in muris cisternæ (3223/b).

\*22. *CHTHONOBLASTUS LYNGBYEI*, Kg.

Arracan, Akyab, in rupibus marinis inundatis (3285).

\*23. *CHTHONOBLASTUS BURMANICUS*, Z., n. sp.

Filis 1/1500 lin. crassis, ærugineis v. lutescentibus, indistincte articulatis, parum flexuosis, apice attenuatis, in fasciculos pallide fuscis, 1/300 lin. crassos, flexuosos, contortis; vaginis ad 1/100 lin. crassis, pellucidis, fibrillosis, margine undulatis. Pegu, Tharawa prope Henzadah, in muris cisternæ (3214b).

\*24. *CHTHONOBLASTUS KURZII*, Z., n. sp.

Litoreus, strato nunc obscure chalybeo, nunc luteo-viridi, filamentoso; filis 1/400—1/300 lin. crassis, violascentibus, v. pallide ærugineis, numerosis, in fasciculos laxè contortis, apicibus attenuatis, obtusis; articulis plerumque obsoletis, diametro ad triplum brevioribus, rarius granulatis; vaginis 1/90—1/50 lin. crassis, sordidis, hyalinis, interdum transversim striatis. Pegu, Elephant-point, in rhizophoretis in limosis ad arborum radices et ad algas majores maritimas (3273, 3274).

\*25. *LYNGBYA PALLIDA*, Z., n. sp.

Pallide viridis, adnata, filis 2-4 pollicaribus, cespitosis, flexuosis, luteis v. virescentibus, cum vagina lævi, achromatica, 1/60 lin., sine vagina 1/70 lin. crassis; articulis diametro 3-5plo brevioribus, subtilissimo granulatis. Pegu in montibus Yomah, Wathabwot-choung in saxis arenosis submersis (3175).

\*26. *HYDROCOLEUM MENEGHINIANUM*, Kg.

Pegu, Elephant-point, in rhizophoretis, ad radices et arborum truncos submersos. (3263).

\*27. *HYDROCOLEUM STRIATUM*, Z., n. sp.

Rivulare, semipollicare, ærugineo-nigrum; vaginis 1/90 lin. crassis, transversim striatis, striis in 1/100 lin. 9; filis inclusis plerumque ternis, leviter contortis, 1/180 lin. crassis, dense granulatis, continuis, vel obsolete articulatis; diametro multo brevioribus. Pegu, in rivulo vadoso prope San-yæ-wa ditionis Rangoon (3200).

\*28. *SIROCOLEUM INDICUM*, Z., n. sp.

Cespitè parvulo, vix semiunciali, viridi; vaginis a basi 1/60 lin. crassa ad 1/250 lin. attenuatis, achromaticis; filis initio pulchre ærugineis, apice obtusis, obsolete articulatis, articulis diametro æqualibus, 1/750 lin. crassis, deinde pallidioribus et divisione longitudinali et transversali in gonidia 1/1500 lin. crassa, seriata, diametro 2-4plo longiora, collapsis. (*Sirocoleo*

*Gujanensi* affine, sed multo tenuius. Genus accuratius observandum). Arracan, Akyab, in rupibus maritimis inundatis (3280).

\*29. *SYMPLOCA KÜRZIANA*, Z., n. sp.

Lignicola, pollicaris et ultra, griseo-æruginea, fasciculis strictis, densis, basi coalitis: filis rectis, pallide ærugineis, subtiliter granulatis, continuis vix hinc inde obsolete articulatis, cum vagina 1/375 lin. crassis; vaginis achromaticis, arctis, superne sæpe vacuis. Pegu, in fundo naviculæ fluminis Myitnan ad Thabyægon (3222).

\*30. *SYMPLOCA LUTESCENS*, Z., n. sp.

Lignicola, semipollicaris, vix ultra, fasciculis basi viridi-ærugineis, apicem versus lutescentibus, dense cæspitosis; filis pallide ærugineis, apice evaginatiss, granulatis, sine vagina 1/450—1/300 lin. crassis; articulis obsoletis; vaginis rigidis, achromaticis, ad 1/175 lin. crassis. Pegu, in planitie alluviali fluminis Irrawaddi, in fundo naviculæ, qua fluvium Lhein prope Beendau-Hseat transiit cl. Kurz (3160).

*NOSTOCHEÆ.*

\*31. *NOSTOC ELLIPSOPOURUM*, Rabenh. (*Hormosiphon*, Desmaz.) var. vaginis achromaticis.

Prome, in montibus Yomæ, inter muscos secus declivia rivuli Whay-dho (3178).

\*32. *NOSTOC GRANULARE*, Rabenh. (*Hormosiphon*, Kg.).

Pegu, Elephant-point, in aquis dulcibus stagnantibus (3291).

\*33. *NOSTOC PURPURASCENS*, Kg. (*N. rufescens*, Ag., forma purpurascens). Pegu, Kadeng-choung ad Natmadhee, natans (3230).

\*34. *NOSTOC RIVULARE*, Kg.

Pegu in montibus Yomæ, Koon-choung ad saxa arenosa humida (3176).

\*35. *NOSTOC HETEROTHRIX*, Z., n. sp.

Strato irregulariter expanso, olivaceo-viridi; filis leviter flexuosis, inæqualibus; alteris ærugineis, articulis globosis, 1/600—1/450 lin. crassis, cytiodermate vix conspicuo hyalino; alteris fuscis, cytiodermate evidenti, colorato, articulis globosis v. ellipticis, ad 1/175 lin. crassis; cellulis perdurantibus ellipticis, ceteris paulo majoribus. (Forsan *Hormosiphon heterothrix*, Kg.?) Pegu, in valli Pazwoondoung, in rivulo Bala-choung (3196); secus declivia limosa fluminis Irrawaddi ad Khyoung-gyee (3163).

\*36. *NOSTOC KÜRZIANUM*, Z., n. sp.

Terrestre, thallo fusco-atro, irregulariter expanso, membranaceo; filis densis, parum curvatis, fulvis; articulis 1/600—1/500 lin. crassis, sphaericis,

arctis, virescentibus; peridermate tenui, hyalino; cellulis perdurantibus globosis, ad 1/400 lin. crassis. Pegu, in montibus Yomæ centralis, Whathabwot-choung ad declivia limosa (4138).

**\*38. NOSTOC LIMOSUM, Z., n. sp.**

Terrestre, thallo olivaceo-fusco, tenui, indefinite expanso; filis brevibus rectis, dense implicatis, filis leptothrichoideis tenerrimis, articulatis, hyalinis intermixtis; articulis 1/500—1/300 lin. crassis, auctis, globosis v. ellipticis, arcte connexis, granulis viridibus fartis; peridermate hyalino, achromatico; cellulis perdurantibus sphaericis, duplo majoribus. Pegu, in planitie fluminis Irrawaddi, in limo ripario fluvii Lein inter Theo-choung et Beendau Hseat (3157).

**\*39. NOSTOC SAXATILE, Z., n. sp.**

Subglobosum, vetustate intus cavum, magnitudine cerasi, olivaceo-fuscum, aggregatum; peridermate fuscescente, filis non vaginatis, flexuosis; articulis ellipticis, pallide ærugineis, subtiliter granulatis, 1/600—1/500 lin. crassis; cellulis perdurantibus globosis, ad 1/375 lin. crassis. Pegu, in montibus Yomæ centralis, Kayeng-mathay-choung in saxis arenosis humidis (3180).

**SPERMOSIREÆ.**

**\*40. ANABÆNA BULLOSA, Kg.**

Pegu, in valli fluminis Sittang, in laculo prope Otwang, Tounghoo (3150); Pegu, in planitie fluvii Pazwoondoung, Bala-choung in limo (3241/6).

**\*41. ANABÆNA FLOS-AQUÆ, Kg.**

Pegu, in fluvio Lhein inter Beendau-Hseat et Theong-choung (3159).

**\*42. ANABÆNA STAGNALIS, Kg.**

Pegu, in fluvio Lhein prope Beendau-Eng (3161/6); Khyoung-gyee ad ripas fluminis Irrawaddi (3164).

**\*43. ANABÆNA SUBTILISSIMA, Kg.**

Rangoon, in limo canalium æstuariorum (3205).

**\*44. ANABÆNA INDICA, Z., n. sp.**

Strato tenui, expanso, obscure viridi, deinde fusco; filis rectiusculis, densis, subvaginatis, ærugineis, denique fuscis, apicem versus attenuatis; articulis tenuioribus 1/650 ad 1/600 lin. crassis, sphaericis, sæpe geminatis; crassioribus (sporangiiis) ad 1/350 lin. crassis, sphaericis, v. ellipticis; cytioplasmate dilute ærugineo, granuloso. Arracan, Akyab, in limo aquæ subsalsæ (3213, 3218); Pegu, in montibus Yomæ, Yaitho-choung, in arena humida rivuli frequens (3234).

\*45. *CYLINDROSPERMUM HUMICOLA*, Kg.

Pegu, in limo ripario fluminis Irrawaddi ad Khyoung-gyee (3165).

\*46. *CYLINDROSPERMUM MACROSPORUM*, Kg.

Pegu, Kadeng-choung ad Natmadhee, natans (3230).

*RIVULARIÆ.*\*47. *GLOIOTRICHIA KURZIANA*, Z., n. sp.

Thallo globoso, lineam crasso, obscure olivaceo; filis ærugineis, brevibus, subulatis; articulis sæpe confluentibus, inferioribus ad 1/300 lin. crassis, diametro duplo brevioribus, superioribus eam æquantibus; vaginis ad 1/150 lin. crassis, achromaticis, sporis ærugineis v. lutescentibus, ovatis, basi ventricosis, ad 1/180 lin. crassis, diametro 2-4plo longioribus, dense granulatis; cellulis perdurantibus sphaericis, 1/250 lin. crassis.—Arracan, Akyah in planitis aquæ dulcis (3212).

\*48. *RIVULARIA PEGUANA*, Z., n. sp.

Thallo gelatinoso, indefinite expanso, olivaceo, molli, hyalino; filis inclusis ærugineis, basi 1/300 superne 1/500 lin. crassis, apice plus minusve acuminatis, laxè intricatis, flexuosis, nunc distincte articulatis, articulis v. moniliformibus, diametro æqualibus v. duplo longioribus; nunc—præsertim in parte superiore,—continuis; cellulis basilaribus globosis, 1/300—1/175 lin. crassis, denique in sporangia fusca permutatis.—Pegu, Kadeng-choung ad Natmadhee in truncis vetustis submersis (3228).

*MASTIGOTHRICHÆ.*\*49. *MASTIGOTHRIX ÆRUGINEA*, Kg.

Pegu, Yenay Eng, in planitis alluviali fluminis Irrawaddi, ramis emortuis insidens (3132).

\*50. *SCHIZOSIPHON PARIETINUS*, Næg.

Arracan, Akyah in parietibus Phari vetusti (3215).

*SCYTONEMACEÆ.*\*51. *SCYTONEMA AUREUM*, Menegh.

Pegu, in variis locis frequens, ad rupes et corticola.—Elephant-point (3276); inter Rangoon et San-yæ-wa (3352); in montibus Yomæ centralis, Kayeng-mathay-choung, ad saxa arenosa (3173).

\*52. *SCYTONEMA CINEREUM*, Menegh.

Pegu, in templis pagoda dictis vetustis fere undique; Kya Eng in templo vetusto (3199).

var. b. *Julianum*, Rabenh. (*Drilosiphon Julianus*, Kg.). Pegu, in montibus Yomæ centralis, Yay-gna-choung ad saxa arenosa (3236).

\*53. *SCYTONEMA GRACILE*, Kg.

Pegu, in planitie fl. Irrawaddi, Palay Kweng in cisternæ muris (3224).

\*54. *SCYTONEMA TOMENTOSUM*, Kg.

Supra Rangoon, corticola (3466).

\*55. *SCYTONEMA PEGUANUM*, Martens.

Pegu, in valle Sittang (3139); Phoung-gyee (3118), in truncis arborum frequens.

\*56. *SCYTONEMA VARIUM*, Kg.

Pegu, in montibus Yomæ, in valle Choung-menah (Khaboung) (3152); Wachoung (Pazwoondoung) (3241/0).

\*57. *SCYTONEMA VIEILLARDI*, Mart.

Attacan, Akyab, in stagnis exsiccatis subsalsis (3287).

\*58. *SCYTONEMA FULVUM*, Z., n. sp.

Strato obscure olivaceo; filis curvatis, 1/180—1/120 lin. cum vagina crassis, fulvis; pseudoramulis sparsis, divaricatis, conformibus; apicibus attenuatis, clausis, extremis hyalinis; filis internis vix conspicuis, pallide virescentibus; articulis obsoletis; vaginis lævibus, aretis, aureo-fulvis.—Pegu, Rangoon in foliis calami (3467); Yoma in cortice arborum (3146).

\*59. *SCYTONEMA FUSCUM*, Z., n. sp.

Strato pannoso, fusco-rubescens; filis 2-3 lin. altis, subsimplicibus, gracilibus, elongatis, basi 1/180—1/120 lin. cum vagina, superne 1/200 lin. cum vagina, 1/300—1/250 lin. sine vagina crassis; vaginis lævibus, saturate fuscis, apicem versus pallidioribus; filis inclusis pallide virescentibus, obsolete articulatis, granulatis, articulis diametro æqualibus.—Pegu, in terra nuda et ad declivia argillosa, Sanyæ-wa prope Rangoon in oryzetis (3201); in montibus Yomæ in valle fluvii Choung-menah (3153); Wachoung, in via cava (3187).

\*60. *SCYTONEMA KURZIANUM*, Z., n. sp.

Strato olivaceo; cæspitulis vix lineam altis, compactis; filis 1/300 lin. cum vagina 1/450 lin. sine vagina crassis, subsimplicibus, basi coalescentibus curvatis, internis articulatis, viridi-lutescentibus; articulis sæpe obsoletis, diametro æqualibus; vaginis achromaticis v. lutescentibus; cellulis perdurantibus globosis.—Pegu, Yoma, in cortice arborum (3141/a).

\*61. *SCYTONEMA MURALE*, Z., n. sp.

Strato compacto, spongioso, lineam crasso, sordide olivaceo, v. nigrescente; filis intricatis, flexuosis, parce ramosis; pseudoramulis conformibus, brevibus, cum vagina 1/300—1/200 lin. crassis, luteis, apice cinereis, inter-



dum roseolis ; filis internis 1/350—1/300 lin. crassis, pallide viridibus, apice hyalinis, distincte articulatis ; articulis diametro æqualibus, v. duplo brevioribus ; vaginis subachrois, aretis ; cellulis perdurantibus globosis.—Rangoon ad muros hospitii circuit-house dicti (3207, 3209).

\*62. *SCYTONEMA OLIVACEUM*, Z., n. sp.

Strato cespitoso, 2-3 lin. alto, olivaceo ; filis leviter flexuosis, rigidis, cum vagina 1/150—1/115 lin. crassis ; internis 1/180 lin. crassis, cinereis, distincte articulatis ; articulis lamellosis, v. granulosis et linea transversali dimidiatis, diametro parum, hinc inde 2½plo brevioribus ; pseudoramulis, divaricatis, sæpe geminis, non tenuioribus ; vaginis fuscis, lævibus. Pegu, in montibus Yomæ centralis, Zamayee-choung, in fissuris humidis rupium arenosarum (3235).

\*63. *SCYTONEMA PARVULUM*, Z., n. sp.

Strato tenui, tomentoso, fuscescens ; filis brevibus, subsimplicibus, attenuatis, basi 1/375 lin. superne 1/500 lin. cum vagina vix 1/700 lin. sine vagina crassis, a basi distincte articulatis ; articulis diametro æqualibus, vel longioribus, superne confluentibus ; vaginis fuscis, filis internis viridibus. Pegu, in saxis arenosis montium Yomæ australis (3156).

\*64. *SCYTONEMA (SYMPHYOSIPHON) RHIZOPHORÆ*, Z., n. sp.

Cespitulis obscure olivaceis (in siccatis cinereo-nigrescentibus), spongioso-hirtis, semilineam crassis ; filis fasciculatis, flexuosis, fuscis, parce pseudoramosis, cum vagina 1/300—1/225 lin. crassis, apicem versus attenuatis, internis pallide ærugineis ; articulis diametro æqualibus, vel ad triplum brevioribus, sæpe obsolete ; vaginis aretis, basi et apice brevi, acuminato, hyalinis ; cellulis perdurantibus oblongis. Pegu, Elephant-point, in rhizophoretis ad cortices arborum diversarum, imprimis *Sonneratiæ apetalæ* (3267).

\*65. *SCYTONEMA SUBCLAVATUM*, Z., n. sp.

Calicicola ; strato obscure olivaceo, filis fuscis, sæpe basi connatis, partim (junioribus ?) sursum incrassatis, 1/30—1/20 lin. longis, simplicibus, curvatis, ad 1/180 lin. crassis ; partim elongatis, ramello uno alterove instructis, 1/300 lin. cum vagina crassis ; filis internis virescentibus, nunc obsolete, nunc distincte articulatis ; articulis diametro æqualibus ; vaginis aretis. (Forsan status *Scytonematis muralis*). Pegu, in domo vetusta lateritia opidi Henzadah (3167, 3168, 3169).

\*66. *SCYTONEMA VIOLASCENS*, Z., n. sp.

Cespitè erecto, 3-4 lin. alto, pallide violaceo ; filis basi 1/150—1/100 lin. cum vagina 1/130—1/110 lin. sine vagina crassis, fasciculatis, parce ramosis ; pseudoramulis interdum binis, adpressis, vel intricatis, elongatis, gracilibus, flagelliformibus, variegatis, violaceis, ærugineis et fusco-luteis, ad 1/250 lin.

attenuatis, apice pallidioribus vel hyalinis; articulis diametro ad duplo brevioribus, sæpe confluentibus; vaginis arctis, hirtis, hyalinis v. lutescentibus. Pegu, Yoma in valle Choungmenah (Khaboung) ad declivia argillosa (8154).

\*67. *POLYPOTHRIX BINATA*, Z., n. sp.

Lacustris, cæspitulis 2-3 lin. altis, ærugineo viridibus; filis pulchre ærugineis, primariis  $1/300$  lin. crassis, pseudoramulis divaricatis, elongatis,  $1/500$  lin. crassis; articulis inferioribus distinctis, sæpe dimidiatis, plerumque diametro duplo longioribus, rarius ei æqualibus v. brevioribus, subtorulosis, supremis confluentibus. (Articuli sæpe ad modum *Sirosiphonis* longitudinaliter bipartiti). Pegu, Kya Eng, in radicibus submersis (3195, 3203) Eng-ga-na (3242, 3248).

*SIROSIPHONIACEÆ.*

\*68. *SIROSIPHON PARASITICUS*, Z., n. sp.

Strato cespitoso, fusco; filis virescentibus,  $1/200$  lin. cum vagina  $1/300$  sine vagina crassis, curvatis, parce ramosis; ramis ascendentibus, homogeneis; articulis sæpe obsoletis, vel confluentibus, duplici serie ordinatis, granulosis, diametro brevioribus; vaginis arctis, luteis v. hyalinis. Pegu, Yoma, Choungmenah, in sylvis sempervirentibus ad folia arborum et fruticum (3292).

*PALMELLACEÆ.*

\*69. *PLEUROCOCCLUS VULGARIS*, Menegh. (*Protococcus*, Kg.).  
Rangoon, ad parietes hospitii circuit house dicti (3210).

*DESMIDIEÆ.\**

\*70. *CLOSTERIUM STRIOLATUM*, Ehrenb.

Pegu, Kya Eng, inter plantas submersas aquaticas.

\*71. *PLEUROTÆNIUM BACULUM*, De Bary (*Docidium*, Bréb.).

Pegu, in palude prope Wanet, natans (3238/a).

\*72. *PLEUROTÆNIUM TRABECULA*, Næg. (*Docidium Ehrenberghii*, Bréb.).

Pegu, Eng-ga-na prope Phounggyee (3242).

\*73. *EUASTRUM ANSATUM*, Ralfs.

Pegu, Eng-ga-na (3242).

\*74. *EUASTRUM AMPULLACEUM*, Ralfs.

Pegu, Kya Eng.

\* These are only stray Desmids found by DD. Zeller and Rabenhorst amongst the Algae. My collection of Burmese Desmids is in the hands of Mr. W. Archer of Dublin. (S. Kütz.)

## ZYGNEACEÆ.

## \*74. RHYNCHONEMA KURZII, Z., n. sp.

Articulis sterilibus fine replicatis, diametro ( $1/120$ — $1/100$  lin.) 6-8plo longioribus, sporiferis tumidis; sporis fuscis, ellipticis, diametro ( $1/40$  lin.)  $2-2\frac{1}{2}$ plo longioribus; fasciis spiralibus 2 laxis, torulosis, anfractibus 2. Pegu, Eng-ga-na (3242).

## \*75. SPIROGYRA ADNATA, Kg.

Pegu, Pazwoondoung, Balachoung (3247).

## \*76. SPIROGYRA CRASSA, Kg.

In lacu prope Rangoon (3251).

## \*77. SPIROGYRA DECIMINA, Kg.

Prome, Toung-naweng-choung (3155); Myoma, in rupibus fluminis Irrawaddi (3170); Pegu, Kenbatee in fonte scaturiente (3165/a); Pazwoondoung-choung ad Kyauzoo (3184). Alga vulgatissima Burmæ, præsertim in planitiibus alluvialibus.

Forma *crassior*, filis sterilibus ad  $1/38$  lin. crassis. Pegu, in montibus Yomæ centralis, Wathabwot-choung, in fluvio frequens (3174).

## \*78. SPIROGYRA IRREGULARIS, Næg.

Pegu, Yomah centralis, Wopyoo-choung (Khayengmathay-chg.) versus Ghalee Tay natans (3177); Rangoon in canalibus æstuariis subsalsis (3204).

## \*79. SPIROGYRA JUGALIS, Kg.

Pegu, Kya Eng (3198).

## \*80. SPIROGYRA LONGATA, Kg.

Prome, Khyee Thay in flumine Irrawaddi (3187); Arracan, Akyab (3211).

## \*81. SPIROGYRA MAJUSCULA, Kg.

Pegu, in palude quadam prope Thounnggyee (3244).

## \*82. SPIROGYRA NITIDA, Kg.

Pegu, in palude inter Theanchoung et Oakkan (3161/a); Prome, Khyee-thay in flumine Irrawaddi (3187); Arracan, Akyab, in aqua dulci (3219).

## \*83. SPIROGYRA QUININA, Kg.

Arracan, Akyab in aqua subsalsa (3289).

var.  $\beta$ . inæqualis, Næg. Pegu, Beeling Kadeng-choung ad Kway ma-kheing (3232).

## \*84. SPIROGYRA TROPICA, Kg.

Arracan, Akyab, in aqua subsalsa (3289).

\*85. *ZYGNEMA STELLINUM*, Ag.

Pegu, Tonkyan in vicinitate rivuli Bala-choung (3289).

\*86. *ZYGNEMA VAUCHERII*, Ag.

Pegu, Kya Eng (3194).

\*87. *ZYGNEMA AMPLUM*, Z., n. sp.

Viride, siccatum obscure fuscum; articulis sterilibus diametro (1/60 lin.) ante divisionem 2-3plo longioribus, post eam æqualibus, v. sesquilon-gioribus; fructiferis non tumidis, zygosporis globosis, v. late ellipticis; filis in vagina 1/40 lin. crassa, tenui, continua, subtiliter granulosa, hyalina, inclusis. Pegu, in laculo inter Phounggyee et Kyauzoo (3246).

\*88. *MESOCARPUS INTRICATUS*, Hass.

Pegu, in palude inter Tean-choung et Oakkan (3161).

\*89. *MESOCARPUS SCALARIS*, Hass.

Pegu, Eng-ga-na (3242); Yoma australis, infra pagum Karensium Mui-hau dictum in rivulo (3256).

\*90. *STAUROSPERMUM FRAGILE*, Z., n. sp.

Filis luteolis, intricatis, fragilibus; cellulis diametro (1/140—1/100 lin.) 5-10plo longioribus, ad genicula contractis; zygosporis quadrangularibus, 1/100—1/80 lin. crassis; sporodermate lævi. Pegu, Rangoon in lacu (3252); Kadeng-choung ad Natmadhee (3223). In provincia Pegu, præcipue secus fl. Irrawaddi, vulgaris.

*VAUCHERIACEÆ.*\*91. *VAUCHERIA SESSILIS*, DC., a. *cespitosa*, Ag.

Pegu, Yoma centralis, Khayeng-mathay-choung (3172); var. b. *repens*, Hass. (forma terrestris); ibidem, in limo sicceacente (3181).

*ULVACEÆ.*92. *ENTEROMORPHA COMPRESSA*, L., var. c. *complanata* (*E. complanata*, Kg.).

Pegu, Elephant-point in rhizophoretis (3278); Arracan, Akyab, in mari (3281, 3284).

\*93. *PHYCOSERIS BURMANICA*, Z., n. sp.

Viridis, in sicco sæpius pallide olivacea, radice minuta, disciformi; stipe tenerrimo, rotundato, brevi, mox in phycoma planum, rigidum, basi oblique cuneatum atque attenuatum, obovatum, rectum v. curvatum, 1-2 pollicare, margine in adultioribus crenulatum, transiente. Cellularum diameter 1/300 lin. Pegu, Elephant-point, in rhizophoretis ad radices.

*DIPLOSTROMIÆ.*

\*94. *DIPLOSTROMIUM TENUISSIMUM*, Kg.

Pegu, Elephant-point, in rhizophoretis ad radices (3272).

*CONFERVACEÆ.*

\*95. *CONFERVA FUNKII*, Kg.

Pegu, in palude prope Phounggyee (3244).

\*96. *CONFERVA RHYPOPHILA*, Kg.

Pegu, in planitie fluminis Irrawaddi, Eng-suay in truncis submersis. (3165/c.).

\*97. *CONFERVA SUBSETACEA*, Kg.

Arracan, Akyab in aqua subsalsa (3288).

\*98. *CONFERVA BURMANICA*, Z., n. sp.

Albo-virescens, rigida, intricata; articulis diametro (1/130—1/100 lin.) 2½-5 plo longioribus. Pegu, Yenay-eng in planitie fl. Irrawaddi, in plantis aquaticis (3165/6).

\*99. *CONFERVA UTRICULOSA*, Kg.

Pegu, Yoma centralis, Khayeng-mathay-choung, in stagnis natans (3171); Tay Tay-choung (Zamayco) in limo siccescente (3179).

\*100. *CONFERVA INÆQUALIS*, Rabenh. (*Psichohormium*, Kg.); forma, filis ad 1/120 lin. crassis. Rangoon in aqua vadosa lacus natans (3243).

\*101. *RHIZOCLONIUM HOOKERI*, Kg.

Pegu, Elephant-point in limo marino (3260).

\*102. *RHIZOCLONIUM ARBOREUM*, Z., n. sp.

Obscure viride, siccatum cinerascens; filis a basi apicem versus paulo attenuatis, hinc inde ad genicula intumescens, brevissime radicanibus et geniflexis; articulis diametro (1/35—1/25 lin.) æqualibus, vel duplo longioribus; cytiodermate crasso. Pegu, Elephant-point, in rhizophoretis ad corticem arborum (*Sonneratia apetala*) frequentissime truncorum latus ad septentrionem vergens dense investiens (3261).

103. *CLADOPHORA CALLICOMA*, Kg. (*Cl. glomerata*, forma III. Rabenh.) Pegu, Kadeng-choung ad Natmadhee. (3225).

\*104. *CLADOPHORA JAVANICA*, Kg.

Ibidem (3226).

\*105. *CLADOPHORA STREPENS*, Kg. (*Cl. fracta* c. *strepens*, Kg.).

Pegu, Yoma centralis, Wopyoo, choung (Khayeng-mathay-chg.) versus Ghalee Tay (3177).

106. *CLADOPHORA TRANQUEBARIENSIS*, Kg.

Pegu, Yoma centralis, Tay Tay-choung, natans (3183).

\*107. *CLADOPHORA CODIOLA*, Z., n. sp.

Cespitosa, viridis, sicca pallida, pygmæa, vix 2 lin. longa, subsimplex; filis 1/100—1/75 crassis, apice incrassatis, obtusis; ramellis raris, uni-articulatis; articulis diametro 8-20 plo et ultra longioribus, infimo perlongo; cytiodermate crasso, hyalino, lævi; cytioplasmate granulari. Pegu, Irrawaddi, Eng-suay in truncis submersis (3166).

108. *CLADOPHORA EXIGUA*, Z., n. sp.

Sordide viridis, cespitosa 1-2 lin. alto; filis inferne ramosis, rigidis; ramis paucis, divaricatis, elongatis; articulis primariis 1/100 ad 1/90 lin., mediis 1/160 lin., ramorum 1/350—1/250 lin. crassis, diametro 2-3 plo longioribus, ad genicula constrictis; cytiodermate crassiusculo. Pegu, Balachoung, in conchis (*Paludina*) (3197).

\*109. *CLADOPHORA (ÆGAGROPILA) CONTORTA*, Z., n. sp.

Cespitosa, pallide viridis, filis e radice pulposa provenienti, simplicibus, perraro ramellum unarticulatum emittentibus, 2-4 poll. longis, in funiculos contortis, basi 1/80 lin., sursum ad 1/35 lin. apice 1/100 lin. crassis; articulis cylindricis, valde inæqualibus, diametro 2-12 plo longioribus. Pegu Tonghoo, in fundo naviculi in fluvio Sittang (3143).

110. *CLADOPHORA MINUTISSIMA*, Z. (ad interim).

Pallide viridis, filis in cortice truncorum radicanibus, dense aggregatis, semilineam vix superantibus, 1/250—1/150 lin. crassis, simplicibus, v. raro ramello unicellulari instructis, a basi apicem versus incrassatis; articulis diametro 1½-3 plo longioribus; cytiodermate flaccido, hyalino, cytioplasmate lamelloso. (Forsan *Cladophoræ* cujusdam status juvenilis). Marina Elephant-point in truncis submersis (3264).

*ÆDOGONIACEÆ.*\*111. *ÆDOGONIUM APOPHYSATUM*, A. Br.

Pegu, Kya Eng (3195).

\*112. *ÆDOGONIUM BRAUNII*, Kg.

Pegu, Eng-suay non procul a flumine Irrawaddi infra Henzadah (3166/a); Kadeng-choung ad Natmadhee (3229).

\*113. *ÆDOGONIUM GRACILE*, Kg.

Pegu, Eng-suay in truncis submersis (3165/d).

\*114. *ÆDOGONIUM LANDSBOROUGHII*, Kg.

Pegu, prope Tonkyan supra Rangoon (3248).

\*115. *ÆDOGONIUM ROTHII*, Bréb.

In lacu Rangoonensi fluitans (3253).

\*116. *CEDOGONIUM SCUTATUM*, Kg.

Pegu, Kya Eng in radicibus (3195).

\*117. *CEDOGONIUM TENELLUM*, Kg.

Pegu, in stagnis et fossis prope Tonkian, vicum supra Rangoon (3248).

\*118. *CEDOGONIUM VESICATUM*, Link.

Pegu, Eng-ga-na (3242); Yoma centralis, Zamayee-choung in saxis arenosis (3233).

var. g. *fuscescens*, Kg.

Pegu, Kya-eng in radicibus (3193).

\*119. *CEDOGONIUM KURZII*, Z., n. sp.

Monœcum; cellula basilari biloba, articulo terminali obtuso, articulis diametro (1/45—1/32 lin.) 2-5 plo longioribus, sæpe medio dilatatis, v. cuneiformibus, passim uno fine transversim plicatis; oogoniis sparsis, raro seriatis, ellipticis, diametro (1/30 lin.) 1½-2 plo longioribus; oosporis fuscis, sphaericis, v. diametro paulum longioribus; antheridiis unicellularibus, lanceolatis, medio constrictis. Pegu, in palude prope Wanet (3255).

\*120. *BULBOCHÆTE INTERMEDIA*, De Bary.

Pegu, Kya Eng (3195, 3203).

\*121. *BULBOCHÆTE PEGUANA*, Z., n. sp.

Dense intricata, repetite ramosissima, ramis alternis vel oppositis, sensim attenuatis et setis longis, vix 1/1500 lin. crassis, terminatis; articulis fili primarii ad 1/200 lin. crassi 2-3 plo, ramorum 1/300—1/500 lin. crassorum 5 plo et ultra longioribus; oosporis ignotis. Pegu, Yoma centralis, ad rupes calcareo-siliceas inter muscos in cacumine montis Kambala-toung, alt. 3200 ped. s. m. (3459).

*ULOTHRICHACEÆ.*\*122. *ULOTHRIX SUBTILIS*, Kg.

Pegu, Eng-ga-na (3242).

\*123. *SCHIZOGONIUM TENUISSIMUM*, Z., n. sp.

Pallide flavo-virens, filis simplicibus 1/500—1/375 lin. crassis, passim ramellosis; cellulis diametro duplo longioribus, gonidiis oblongis. Martaban, in Chinchonæ plantationibus, 3500 ped. altitudinis, in rivulo Opo-choung, Shantounggyee (3142).

*CHROOLEPIDÆ.*\*124. *CHROOLEPUS FLAVUM*, Kg.

Yoma centralis, ad bambusarum culmos (3144).

var. filis tenuioribus, articulis longioribus, *Chr. flavi et elongati* intermedium. Yoma, ad arborum corticem frequens (3145).

\*125. *CHROOLEPUS LAGENIFERUM*, Hildebrand.

In lacu Rangoonensi, inter *Confervam inæqualem* in aqua vadosa natans (3243).

\*126. *CHROOLEPUS UMBRINUM*, Kg. (*Protococcus crustaceus*, Kg.). Pegu, Yoma, Yaitho-choung, corticola, frequens (3148).

\*127. *CHROOLEPUS BOTRYOIDES*, Z., n. sp.

Cespitose siccitate pallide luteo, villosa, 2-3 lin. alto; filis flaccidis, ad 1/100 lin. crassis, lævibus; ramis subsecundis, divaricatis, attenuatis, apice 1/250 lin. crassis; articulis diametro  $1\frac{1}{2}$ -2 plo longioribus; spermatiis globosis, minutis, plerumque ad latera ramorum in cumulos botryomorphos aggregatis. Pegu, Yoma, in cortice arborum (3147).

128. *CHROOLEPUS CALAMICOLA*, Z., n. sp.

Cespitose intricato, viridi, (in sicco pallide lutescente); filis ramosis, ramis attenuatis, subsecundis, divaricatis; articulis infimis 1/120 lin. crassis, diametro sesquilonioribus; superioribus diametro (1/300 ad 1/180 lin.) 2-4 plo longioribus; spermatiis plerumque lateralibus, raro terminalibus, sessilibus, globosis v. ellipticis, 1/180 lin. crassis, solitariis, v. seriatis. Supra Rangoon, in silvis sempervirentibus in foliis Calami (3467).

\*129. *CHROOLEPUS ELONGATUM*, Z., n. sp.

Cespitosum, siccitate flavo-cinereum, filis rectis, rigidis, 1/150 lin. crassis, ramosis; ramis secundis, valde elongatis, acuminatis, 1/300—1/225 lin. crassis; articulis primariis diametro duplo, ramorum 4-6 plo longioribus; spermatiis ignotis. Pegu, Yoma, Yaitho-choung, in cortice arborum in sylvis sempervirentibus (3148).

\*130. *CHROOLEPUS FUSCO-ATRUM*, Z., n. sp.

Strato tenui, crustaceo, fusco-atro (in sicco); filis brevibus, rectis, v. parum curvatis, torulosis; ramis divaricatis; articulis fuscis, 1/400—1/300 lin. crassis, globosis, v. late ellipticis. Pegu, in valle Choungmenah (Kha-boung) non procul a Tonghoo, in sylvis sempervirentibus (3469).

\*131. *CHROOLEPUS KURZII*, Z., n. sp.

Semipollicare, viride, cespitosum, in fasciculos conicos dense implicatum, filis primariis ad 1/125 lin., ramorum ad 1/300 lin. crassis; articulis diametro 2-4 plo (rarius pluries) longioribus; ramis divaricatis, subsecundis; spermatiis lateralibus, creberrimis, seriatis, sessilibus v. breviter petiolatis, initio globosis, deinde crateriformibus, 1/250—1/60 lin. crassis. Pegu, Tonghoo, Choungmenah-choung in sylvis sempervirentibus ad folia fruticum (præcipue *Alseodeia*) (3149).



\*132. *CHROOLEPUS TENUE*, Z., n. sp.

Cespitulis exiguis, gregariis, aurantiacis, siccatis cinereis; filis primariis 1/375—1/300 lin. crassis, varie flexuosis; ramis divaricatis, interdum recurvis, 1/500—1/400 lin. crassis; articulis diametro æqualibus, vel ad duplum longioribus, torulosis; spermatiis globosis, terminalibus et lateralibus. *Chr. abietino* proximum, sed articulis omnibus plus minus inflatis, brevioribus et tenuioribus distinguendum. Pegu, Elephant-point, in rhizophoretis ad corticem *Sonneratiæ apetalæ* frequens (3268).

*CHÆTOPHORACEÆ.*\*133. *STIGEOCLONIUM TENUE*, H., *γ. gracile*, Kg.

Pegu, Beendau Eng in caulibus Polygoni (3141).

\*134. *STIGEOCLONIUM RANGOONICUM* Z., n. sp.

Cespitè vix 1½ lin. alto, dilute viridi, vel lutescente, dense implicato; filis primariis 1/375—1/250 lin. crassis; ramis subdichotome secundis, ad 1/900 lin. crassitiem attenuatis, flaccidis; articulis valde inæqualibus, diametrum æquantibus torulosis, ad genicula leviter constrictis, vel cylindricis et ea 2-6plo longioribus. In cisterna quadam oppidi Rangoon (3249).

\*135. *CHÆTOPHORA PISIFORMIS*, Ag.

Pegu, Phounggyee in laculo ad radices submersas (3190); Prome, Myitmakha-choung ad Gho-tau, in plantis aquaticis (3140).

\*136. *CHÆTOPHORA RADIANS*, Kg.

Pegu, Kya Eng in radicibus (3193).

\*137. *CHÆTOPHORA TUBERCULOSA*, Kg.

Pegu, in laculo inter Phounggyee et Kyauzoo (3245).

\*138. *CHÆTOPHORA STRICTA*, Z., n. sp.

Viridis, expansa, mollis, 1-2 lin. crassa; filis internis repetite et dichotome ramosis, strictis; ramis attenuatis, gracilibus, non piliferis; articulis oblongis, ad 1/350 lin. crassis, diametro 1½-3plo longioribus. Pegu, Kadeng-choung at Natmadhee in ramis emortuis submersis (3231); Prome, Khjee-thay, ad silices rivuli tenui aqua fluentis in flumine Irrawaddi (3136).

\*139. *GONGROSIRA PYGMÆA*, Kg.

Forma *tenuis*, non ultra 1/180 lin. crassa. Rangoon, ad rudera lateritia submersa (3250).

140. *GONGROSIRA ONUSTA*, Z., n. sp.

Flavo-viridis, cespitibus confluentibus, lineam crassis; filis e basi fibrosa continua articulatis; articulis diametro (1/150—1/100 lin.) 2—3plo longioribus; ramis numerosis, undique egredientibus, moniliformibus; articulis

ramorum omnibus oogonia globosa, ad 1/125 lin. crassa, formantibus; oosporis fuscis, 1/250 lin. crassis. Pegu, Elephant-point secus littora in truncis vetustis inundatis (3262).

### CHANTRANSIÆ.

\*141. CHANTRANSIA ROSEOLA, Z., n. sp.

Cespitulis minutis, roseo-chalybeis; filis 1/400—1/300 lin. crassis, fastigiatis ramosis; ramis distantibus, erectis; articulis diametro 4plo longioribus. Pegu, Beendau Eng, in caulibus Polygoni (3141).

### BATRACHOSPERMACEÆ.

142. BATRACHOSPERMUM MONILIFORME, Roth.

Pegu, in gurgite profundo paludis prope Phoungyee, ad radices arborum (3188).

### HILDENBRANDTIACEÆ.

\*143. HILDENBRANDTIA ARRACANA, Z., n. sp.

Incrustans, indeterminata, vage expansa, arctissime adnata, fusco-purpurea; cellulis 1/700—1/600 lin. crassis, obsolete angulosis, rotundatis, absque ordine coacervatis. Arracan, Akyab in rupibus maritimis frequens, (3282).

### CERAMIEÆ.

\*144. GONGROCERAS RADICANS, Z., n. sp.

Capillare, repens, pollicare, apicibus rectis, vel parum curvatis, non forcipatis; filis intricatis, subpectinatis, vel repetite dichotomis, radicantibus; radiculis numerosis e parti inferiori egredientibus, continuis, vel articulatis; articulis cylindricis, diametro nunc 1½-2plo longioribus, nunc ei æqualibus, supremis brevioribus; zonis superioribus confluentibus; tetrachocarpis plerumque infra apices ramorum verticillatim dispositis. Pegu, Elephant-point in rhizophoretis ad radices truncosque arborum inundatos, (3274).

### HALYMENIÆ.

\*145. CATENELLA OPUNTIA, Grev.

Pegu, Elephant-point, frequens in rhizophoretis et secus littora in truncis vetustis inundatis, (3265).

### GELIDIEÆ.

146. ACROCARPUS INTRICATUS, Kg. (*Gelidium*, Kg., *Sphærococcus*, Ag.).

Arracan, Akyab in rupibus marinis, (3279).

*POLYSIPHONIEÆ.*

\*147. *POLYSIPHONIA SUBADUNCA*, Kg., *major*, ramis crebrioribus, minus strictis.

Pegu, Elephant-point, in rhizophoretis frequens, (3274).

\*148. *BOSTRYCHIA INTRICATA*, Mont.

Pegu, Elephant-point, in rhizophoretis frequens, (3263).

\*149. *BOSTRYCHIA RIVULARIS*, Harv.

Pegu, Elephant-point, in rhizophoretis ad arborum radices, (3271).

*DELESSERIEÆ.*

\*150. *HYPOGLOSSUM BENGALENSE*, Mart.

Pegu, Elephant-point, in truncis vetustis inundatis ad littora satis frequens, (3266).

\*151. *HYPOGLOSSUM LEPRIEURII*, Kg.

Pegu, Elephant-point, in rhizophoretis frequens, (3270).

*APPENDIX.*

*CHARACEÆ BURMANICÆ*,\* determined by Dr. A. Braun, Professor of Botany in Berlin.

1. *NITELLA ROXBURGHII*, A. Br.

Pegu, Kya Eng, (3295).

2. *NITELLA MICROGLOCHIN*, A. Br. sp. v. subsp. nov. *N. oligospiræ* proxima.

Arracan, in valle Koladyne in stagno quodam silvatico.

3. *N. OLIGOSPIRA*, A. Br.

Pegu, Kya Eng, (3294).

4. *CHARA GYMNOPTIS*, A. Br.

Arracan, frequentissima in oryzetis inundatis vallis Kolodyne, (1964).

\* It may not, I think, be uninteresting to insert at this opportunity the few *Characeæ*, which have as yet been found in Burma. I am indebted to Prof. A. Braun who obligingly sent me the list a long time ago, for the names of the species. (S. KURZ.)

ON THE PTEROPIDÆ OF INDIA AND ITS ISLANDS, WITH DESCRIPTIONS OF NEW OR LITTLE KNOWN SPECIES,—by G. E. DOBSON, B. A., M. B., *Staff Surgeon, H. M.'s British Forces.*

(With Plate XIV.)

[Read July 5th, received July 18th, 1873.]

Although Dr. W. Peters has done so much towards clearing up the synonymy of the *Pteropidæ* as well as of other families of Chiroptera, much yet remains to be done before a correct list of the species can be obtained.

The state of confusion into which the species of this family have fallen, in common with most species of Chiroptera, is mainly due to the great imperfection of the original descriptions, from many of which it is impossible to recognise the family to which the species belongs.\* This imperfection in description has arisen chiefly from the general ignorance respecting the Order which has prevailed amongst Zoologists, who seem to have shared the vulgar antipathy to these animals, if we may judge from the small amount of attention they have received, and also from the want of proper material in the Museums. Most of the *Pteropidæ* being large bats, and therefore unlikely to be preserved by collectors in spirit, have been described from dried specimens, and this also has added much to the imperfection of the description.

Much work, therefore, remains to be done both in obtaining well-preserved duplicates, in comparing them with the type specimens, and in producing from them descriptions from which it may be possible for naturalists in general to determine the species.

If the species of the genus *Pteropus*, as given by Drs. Peters and Gray,† be enumerated, there will be found to be not less than fifty.

The distribution of these fifty species is as follows :—

Continent of India and Burma, .....	1
Malay Archipelago, .....	25
China, Japan, and Loo-choo Islands, .....	4
Solomon Islands ; New Caledonia ; New Hebrides ; Fiji Islands ; Marianne and Viti Islands, .....	9
Australia, .....	5
Africa and its Islands, .....	6

\* Thus Dr. J. E. Gray remarks (P. Z. S. Lond., 1866, p. 148)—“The generic characters of *Aello*, as given by Dr. Leach, occupy nearly a page of a quarto book, and yet no one has been able to discover the genus. One could not have a more convincing proof that it is not mere length of character that is required to define a genus.”

† See Peters in Monatsb. Berlin Akad., 1867, p. 323, and Gray's Catalogue of Monkeys, Lemurs and Fruit-eating Bats, 1870.

It is very remarkable that, supposing the localities to be correct or approximately so, one half of the whole number of species is distributed among the small islands of the Malay Archipelago, while a single species—*Pteropus medius*—is the sole representative, hitherto discovered, of the genus in the Continent of India and Burma.

That a large proportion of the species should be found in the Malay Archipelago and adjoining Islands might be expected, as these animals like monkeys can live only where a constant supply of fruit is attainable throughout the whole year, but the same conditions obtain in the greater part of the Peninsula of India, and especially in Equatorial Africa, yet scarcely one-seventh of the whole number has been found in these regions.

The Malay Archipelago is, therefore, either the original and special home of the genus from which a few species have wandered into India and Africa, or many species remain undiscovered in the latter countries, and probably many of the so-called species which go to make up the large number from Malayana have been founded on insufficient grounds.

I have not the least doubt that the real number of species is much less than that recorded, and that many described as new by Temminck and others will, with the accession of additional and more perfectly preserved specimens to the collections hitherto available in our Museums, be found referable to a few really distinct species. This may be especially expected in the case of those species that have been founded on differences in the colour of the fur, which appears to have been regarded by some zoologists as of equal importance with the colour of the feathers in birds.

I have elsewhere\* dwelt at some length on the variability of the colour of the fur in many species of bats, and have shown that, in the *Pteropi* especially, individuals belonging to the same species present very different shades of colour according to sex age and season, and probably also, but in a less degree, according to locality.

Differences in the form of the skull and in the teeth have been also used to distinguish the species, but these, though of the greatest importance, are not satisfactory, if alone available as a means of diagnosis, for it should, surely, be possible to distinguish the species of a given vertebrate animal without first finding it necessary to kill and make a skeleton of it.

It is, therefore, desirable that, in the description of species, certain external characters may be given from which the living animal can be known, and these, I believe, may be found in the shape and relative size of the ears, and in the quality and distribution of the fur.

In all the Chiroptera, we find one or more of the organs of special sense greatly developed to supplement or, in some genera, almost wholly replace the visual organs (which in most cases are very rudimentary or, where

\* Proc. Zool. Soc. of London, 1873.

moderately developed, can be of little use owing to the nocturnal habits of the animals), and this development varies remarkably according to family, genus, and species.

Thus the peculiar form of the nose-leaf taken with the shape of the ears at once characterises the *Rhinolophidae*, and each species of the family may be distinguished by secondary modifications of these organs alone.

And in those families of bats where the nostrils are not furnished with appendages, the form and relative size of the ear will generally be found to be the most important characters for readily and accurately determining the species, and, next to and with these, the quality and distribution of the fur.

I shall employ this principle of diagnosis in the following descriptions of the species of Frugivorous Bats known to inhabit Continental India and Burma, and the Islands of the Bay of Bengal.

#### Genus I.—PTEROPUS, Brisson.

*Nostrils projecting; upper lip with a vertical groove in front bounded laterally by naked prominences; index finger with a distinct claw, metacarpal bone of second finger shorter than the index finger; wings from the sides of the hairy back; wing-membrane attached to the back of the first phalanx of the second toe; tail none.*

*Dentition* :—*in.*  $\frac{4}{4}$ ; *c.*  $\frac{1-1}{1-1}$ ; *pm.*  $\frac{2-2}{3-3}$ ; *m.*  $\frac{3-3}{3-3}$ .

*A.—Ears acutely pointed.*

#### PTEROPUS MEDIUS. Pl. XIV, Fig. 1.

*Pteropus medius*, Temminck, Monog. Mammal., I, p. 176.

„ *edwardsii*, (in part) Geoff., Ann. du Mus., vol. xv., p. 92.

„ *leucocephalus*, Hodgson, Journ. As. Soc. Beng., iv., p. 699.

„ *assamensis*, McClelland, Proc. Zool. Soc. Lond., vii., p. 148.

Ears long, with acutely pointed tips, the upper third of the outer margin concave beneath the tip; in fully grown individuals the longest diameter of the opening of the external ear, from the point of junction of the outer and inner margins below to the tip, measures one inch and a half.\*

Nostrils projecting, with a deep intervening emargination; upper lip with a narrow vertical groove in front bounded laterally by naked rounded prominences continuous with the integument of the nostrils.

\* The length of the ear (anteriorly) as given in the tables of measurements accompanying this paper (and also wherever mentioned in previous papers) has been determined by measuring the distance between the termination of the outer margin below and the tip. The breadth has been ascertained by means of a string passed round the ear posteriorly from the inner to the outer margin.

The ears are naked except at the bases posteriorly, and a narrow triangular portion covered with short hairs terminating towards the middle of the outer margin; anteriorly, the anterior flattened edge of the inner side of the conch is covered from the base upwards for about one-third of the length of the ear.

The face is naked in front of a line joining the inner angles of the eyes, and on either side of the naked space (which corresponds to the position of the nasal bones) a few long fine hairs arise from separate papillæ. The fur is rather dense and moderately long on the back of the head, neck, and shoulders, but short and appressed on the back, narrowing to about two inches in width across the loins. A narrow line of short fur passes outwards on to the wing membrane posterior to the humerus for rather more than half its length; the elbow is quite naked, but a few short hairs cover a narrow portion of the wing-membrane, about one inch and a half long, posterior to the forearm. The femur, and the interfemoral membrane as far as a line corresponding to the position of the semi-circular band on the under surface of the membrane are covered; the tibiæ are naked, or have only a few very short hairs; the feet are quite devoid of hair.

On the under surface, the whole body is well covered; the antebrachial membrane is similarly covered as far as a line drawn from the knee to a point about one inch posterior to the elbow joint, thence the hair passes outwards on the wing-membrane posterior to the forearm, terminating at about the beginning of the distal third of the radius. The thighs are covered, the legs and inter-femoral membrane are quite naked.

The nape of the neck and the shoulders are usually reddish yellow or golden yellow or pale straw colour, but every shade of these colours has been observed, the different colours and intermediate shades appearing to depend on sex, age, season, or locality. The darker shades are usually found in females.

The chest and upper part of the abdomen are either of the same colour as the nape of the neck or of a darker hue. The remainder of the fur black or dark brown often mixed with grayish hairs.

The fur of the neck is coarser and longer than that covering other parts of the body. In most male specimens a circular tuft of rigid unctuous hairs, of a deep reddish yellow colour, is found on each side of the neck, situated midway between the base of the ear and the origin of the ante-humeral portion of the wing-membrane from the shoulder. In a large male obtained near Calcutta, these tufts occupy a space one inch in diameter, and the hairs composing them measure about one-third of an inch in length.

*Hab.*—India generally, from Kachh to Burma, and from the Himalaya to Ceylon.

To this section of the genus belongs *Pt. edulis*, Péron et Lesueur, from

Java and Sumatra, which has been reported from Tenasserim,\* and may probably be found in the Nicobar Islands. This species, the largest of known bats, may be readily distinguished from *Pt. medius* by its ears, and by the distribution and quality of the fur. The ears are proportionately shorter and narrower than in the Indian species, and the concavity of the upper third of the outer margin is much less distinct. In a specimen from Java, in the Indian Museum, the ears are about the same length as in the most adult specimen of *Pt. medius*, while its forearm exceeds that of the latter species by more than two inches, and the tibia by an inch and a half. Compared with *Pt. medius* the light coloured portion of the fur extends further down upon the shoulders, and the breadth across the loins occupied by hair is proportionately much greater: this is well seen when specimens of equal size are compared, the breadth of the fur in this position in the not fully grown *Pt. edulis* being nearly, if not quite, double that in the adult *Pt. medius*. Elsewhere the distribution of the fur is similar in both species, but the hair on the wing-membranes and legs is conspicuously much longer in *Pt. edulis*.

*B.—Ears rounded at the tip.*

*PTEROPUS NICOBARICUS.* Pl. XIV, Fig. 2.

*Pteropus nicobaricus*, Fitzinger, Sitzungsab. Wien. Akad., 1860, p. 389, *nomen nudum*.

„ *melanotus*, Blyth, Cat. Mammal. Mus. As. Soc. Beng., 1863, p. 20, *nomen nudum*.

„ *nicobaricus*, Zelebor, Reise der Oester. Freg. 'Novara,' Säugethiere, 1868, p. 11.

Ears rounded off at the tip, their breadth nearly equal to their length; the upper third of the outer margin slightly flattened, not concave, the lower two-thirds convex; in fully grown individuals the longest diameter of the opening of the external ear, from the point of junction of the outer and inner margins below to the tip, scarcely exceeds one inch.

The distribution of the fur of the body is similar to that of *Pt. medius*, but the hair on the wing-membrane is very much shorter.

In some male specimens the colour of the fur also corresponds very closely with that of *Pt. medius*; generally, however, the lighter coloured portions of fur on the nape of the neck, and on the shoulders and chest, are of a deeper hue than in the latter species, usually dark ferruginous red or chestnut; females and young males are commonly *intensely black throughout*; in some female specimens the position of the light-coloured tippet in the male is indicated by a reddish tinge.

\* A very badly preserved dried skin of an immature specimen of some species of *Pteropus*, in the Indian Museum, has been identified by Mr. Blyth with *Pt. edulis*, and the locality 'Tenasserim' recorded in his Catalogue. The specimen is in such a very bad condition I am able neither to confirm nor to correct Mr. Blyth's identification.



The skull differs from that of *Pt. medius* in being shorter, wider across the maxillary and nasal bones, and in having nearly all its processes and ridges much more strongly defined. The distance between the small anterior upper premolars exceeds that in *Pt. medius* by one-tenth of an inch. The *foramen ovale* is divided in the centre by a process of bone, in *Pt. medius* it is undivided. A post-orbital process of the zygomatic arch is present, though not so well developed as in *Pt. medius*.

The mandible is shorter and its rami deeper than in *Pt. medius*; the coronoid process is more developed vertically, its posterior margin is nearly straight, not deeply concave, and its superior angle is narrowly, not broadly rounded off as in the latter species.

The teeth are stouter in *Pt. nicobaricus* but their general characters are the same in both species.\*

*Hab.*—Andaman and Nicobar Islands, probably Java also. An old dried specimen in the Indian Museum is labelled Java, but not numbered in Blyth's Catalogue.

Neither Fitzinger nor Blyth described this species, though they invented names for it. Zelebor's description occupies nearly two pages of a quarto book, and very careful measurements of the original specimen are given, yet, as his description is taken from a young individual and contains few really diagnostic characters, I was unable to feel certain that specimens obtained by me last year from the Andamans and Nicobars should be referred to this species. But Dr. Peters has lately, at my request, very kindly compared some specimens sent to him from the Indian Museum with the type specimens of *Pt. nicobaricus* in the Vienna Museum. He informs me that they agree in the form of the ear and feet. With this additional information I feel no hesitation in referring the specimen from which the above description is taken, to that species.

	Pteropus medius.					Pteropus nicobaricus.					Pt. edulis.
	Calcutta.	Mambum.	Calcutta.	Pegu.	Assam.	Nicobars.	Andamans.	Andamans.	Andamans.	Java.	Java.
	♂	♂	♂	♂	♂	♂	♂	♂	♂	♀	♂
Length, head and body, .....	9.0	...	7.5	9.0	10.5	10.5	8.8	8.0	9.8	9.0	13.0
" head, .....	3.1	3.15	2.75	3.0	3.0	3.0	3.0	3.0	2.9	2.8	3.5
" ear (anteriorly), .....	1.5	1.40	1.45	1.5	1.45	1.05	1.05	1.1	1.05	1.05	1.5
Breadth, ear, .....	0.85	...	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.75
Length, from ear to tip of nostril, .....	2.7	...	2.4	2.6	2.8	2.65	2.45	2.5	2.35	2.35	2.8
" from eye to tip of nostril, .....	1.3	...	1.1	1.15	1.2	1.15	1.15	1.10	1.15	1.05	1.2
" forearms, .....	6.6	6.7	6.0	6.2	6.3	6.5	5.8	5.9	5.8	5.4	6.5
" thumb, .....	2.7	2.7	2.8	2.85	2.6	2.8	2.6	2.6	2.6	2.35	3.0
" second finger, .....	12.5	13.6	11.5	11.8	11.9	12.5	11.0	10.5	11.5	11.5	16.0
" fourth finger, .....	8.5	9.5	7.8	8.0	8.0	8.5	7.4	7.3	7.8	8.0	10.5
" tibia, .....	3.0	3.2	2.7	2.8	2.8	3.0	2.8	2.7	2.6	2.6	4.0
" foot and claws, .....	2.3	2.3	2.0	2.0	2.0	2.0	1.7	2.0	2.0	2.0	2.4
" calcaneum, .....	1.0	0.9	0.85	0.8	0.8	0.9	0.65	0.85	...	0.75	1.5

\* For the dentition of the genus *Pteropus* see De Blainville, *Ostéographie*.

## Genus II.—CYNOPTERUS,\* F. Cuvier.

Nostrils projecting; upper lip with a vertical groove in front, bounded laterally by naked prominences; index finger with a distinct claw; metacarpal bone of second finger exceeding slightly in length the index finger; wings from the sides of the hairy back, wing-membrane attached to the base of the first toe; tail short, distinct.

Dentition :—in.  $\frac{4}{4}$ ; c.  $\frac{1-1}{1-1}$ ; pm.  $\frac{2-2}{3-3}$ ; m.  $\frac{2-2}{2-2}$ .

## CYNOPTERUS MARGINATUS. Pl. XIV, Fig. 4.

*Pteropus marginatus*, Geoffroy, Ann. du Mus. xiv, p. 97.

„ *pyrivorus*, Hodgson, Proc. Zool. Soc. Lond., 1836, p. 36.

*Cynopterus affinis*, Gray, Cat. Mammal., 1850, xix, p. 38.

*Eleutherura marginata*, Gray, Catalogue of Monkeys, Lemurs and Fruit-eating Bats, 1870, p. 118.†

Ears large, rounded at the tip, with a slight but distinct concavity of the outer margin immediately beneath the tip; both the outer and inner margins are bordered with white; the white border along the inner margin is about one-twelfth of an inch wide, and contrasts strongly with the dark brown colour of the ear; the outer margin terminates below without forming a lobe at the base.

Nostrils projecting, with a deep intervening emargination. The upper lip marked in the centre, as in *Pteropus*, with a narrow vertical groove bounded laterally by naked rounded prominences continuous with the integument of the nostrils.

The ears are naked posteriorly except at their bases; anteriorly, a few hairs appear on the conch along the outer side of the white border of the inner margin of the ear, and, similarly, along the inner side of the white border of the outer margin. On the upper surface, the fur of the back extends upon the wing-membrane nearly as far as a line joining the elbow and knee joints, also, thinly, upon the humerus, the femur, and proximal end of the tibia. Beneath, the antebrachial membrane is covered with moder-

\* I have placed the genus *Cynopterus* next *Pteropus* as I believe it presents more affinities with that genus than any of the other genera of *Pteropidae*. The species of these genera agree very closely in the form of the nostrils and of the narrow emargination on the upper lip bounded by naked prominences. In *Cynonycteris* this emargination is wide and deep with slanting sides, altogether very different from the same part in *Pteropus*. In habit also the species of *Cynopterus* and *Pteropus* perfectly agree; they are all strictly frugivorous bats and live in trees, while the species of *Cynonycteris* are commonly found in caves, and I have been informed that a colony of *C. amplexicaudata* living near the sea were seen to feed on Mollusca left exposed by the tide.

† For a complete list of synonyms of this species see Peters in Monatsb. Berlin Akad., 1867, p. 866, and 1869, p. 395.

ately long thinly spread hairs, and the wing-membrane is clothed to about the same extent as on the upper surface, the hairs also passing outwards in a narrow band posterior to the forearm. The colour of the fur is extremely variable, dark brown, reddish-brown, snuff-brown or olive-brown, sometimes with a bluish tinge throughout.

The first upper premolar is minute, and in the centre of the space between the canine and second premolar; the second premolar is about equal to the lower canine in vertical extent.

*CYNOPTERUS MARGINATUS*, var. *ANDAMANENSIS*. Pl. XIV, Fig. 5.

This is, I believe, a permanent variety of *C. marginatus*. It is readily distinguished by the small size of the ears which are similarly margined with white. The relative size is very well shown in the accompanying illustration.

Specimens of young individuals of *C. marginatus* from Bengal with forearm bones nearly half an inch shorter than specimens of adult animals of this variety from the Andamans have considerably larger ears.

*CYNOPTERUS SHERZERI*. Pl. XIV, Fig. 6.

*Pachysoma sherzeri*, Fitzinger, Sitzungs. Wien. Akad., 1860, p. 389, (*nom. nudum*).

*Cynopterus marginatus*, var. *Pachysoma Sherzeri*, Zelebor, Reise der Oester. Freg. 'Novara,' Säugethiere, p. 11, 1868.

This species, like *Pteropus nicobaricus*, was named but not described by Fitzinger, and Zelebor regards it as a variety only of *C. marginatus*. It is at once distinguished from that species by its small and narrow ears which are also *not* margined with white. When adult specimens of *C. marginatus* and of this species are compared together, the difference in the size and shape of the ears is very striking.

The muzzle is thicker, and the colour of the fur much darker than in any specimen of *C. marginatus*.

Zelebor mentions that the ears of the specimens obtained at Car-Nicobar are margined with white, but I have been unable to detect even the slightest trace of a white border in the ears of several specimens examined by me. Therefore, either Zelebor has been mistaken, or the white bordering of the ears is not a constant character in this species, or I have wrongly identified the species here described with *C. sherzeri*. But although it is quite impossible to identify the species here described with that obtained during the Novara Expedition at Car-Nicobar Island from Zelebor's description (which consists merely of some unimportant remarks on the colours of the fur, wing-membrane, and eyes), yet as the animals which furnished the above description were taken not only at the same island—Car-Nicobar—but also from the same place on that island, namely, from the leaves of the cocoa-nut palms, I think it highly probable that they

belong to the same species, and, accordingly, to avoid the possibility of introducing a fresh synonym, I have retained Fitzinger's name.

CYNOPTERUS BRACHYSOMA. Pl. XIV, Fig. 7.

*Cynopterus brachysoma*, Dobson, Journ. A. S. B., 1871, p. 260.

I have little to add to my original description of this species.

The ears are much rounded off above, and the upper third of the outer margin is straight or slightly convex; the presence of a rounded lobe at the base of the outer margin at once distinguishes this species.

The difference in the measurements of the breadth of the ear given with the original description and in the table below is due to the measurement having been taken in the former case across the concavity of the ear, anteriorly; in the latter, by means of a string round the convexity, posteriorly.

Genus III.—CYNONYCTERIS, Peters.

*Nostrils projecting; upper lip with a wide groove in front with smooth not elevated margins; index finger with a distinct claw; metacarpal bone of second finger exceeding, or equalling, the index finger in length; wings from the sides of the hairy back; wing-membrane from the base of the second toe; tail short, distinct.*

*Dentition*:—*in.*  $\frac{4}{4}$ ; *c.*  $\frac{1-1}{1-1}$ ; *pm.*  $\frac{2-2}{3-3}$ ; *m.*  $\frac{3-3}{3-3}$ .

CYNONYCTERIS AMPLEXICAUDATA. Pl. XIV, Fig. 8.

*Pteropus amplexicaudatus*, Geoff. Ann. du Mus., Vol. xv, p. 96.

„ *Leschenaultii*, Desmarest, Mammal., p. 110.

„ *amplexicaudatus*, Temm., I, p. 200.

„ *seminudus*, Kelaart, Journ. As. Soc. Beng., xxi, p. 345.

„ *Leschenaultii*, Blyth, Cat. Mammal. Mus. As. Soc. Beng., p. 21.

Head long, triangular; upper lip with a wide groove directly continuous with the emargination between the nostrils, the edges of the groove smooth, not thickened as in *Pteropus* or *Cynopterus*; ears moderate, triangular, rounded at the tip, the upper half of the outer margin straight, the lower half convex.

Posteriorly the ears are naked except at their bases, anteriorly the conch is covered with a few very short fine hairs. The fur of the body extends upon the humerus and upon the fleshy part of the forearm, the remaining part to the carpus has only a few very fine hairs. The portion of the back and wing-membrane covered with fur across the loins is not more than an inch in breadth. The interfemoral membrane is densely covered with hair at the root of the tail, and on either side as far as lines drawn from the knee joints to the base of the free portion of the tail; the remaining portion, the legs and a considerable part of the wing-membrane beyond, are clothed with short, thinly-spread fur which extends along the wing membrane and legs

to the back of the feet. Beneath, the ante-humeral membrane is clothed with rather long thinly-spread fur, and the wing-membrane is similarly covered as far as a line drawn from the knee to a point about half an inch posterior to the elbow, whence the fur extends outwards to the carpus. The interfemoral membrane, the legs, and the feet are covered with a few very short hairs.

First upper premolar minute, equally distant from the canine and second premolar; second premolar exceeding lower canine in vertical extent; first lower premolar small, less than half the size of the second premolar; second premolar nearly equal to lower canine in vertical extent.

*Hab.*—From the Persian Gulf to the Philippine Islands. Bengal; Southern India; Ceylon; Burma; Celebes; Amboyna; Timor; Aru Islands.

CYNOXYCTERIS MINOR, n. sp. Pl. XIV, Fig. 9.

Ears smaller and much narrower than in *C. amplexicaudatus*; muzzle also proportionately shorter.

The minute first upper premolar is closely wedged in between the canine and second premolar; in *C. amplexicaudatus* it is separated by a narrow interval from both these teeth.

The distribution of the fur is somewhat similar to that of *C. amplexicaudatus*, but it is much shorter on the wing-membrane and almost absent from the backs of the tibiae, from the adjoining portions of wing-membrane, and from the feet.

*Hab.*—Java.

	Cynopterus.									Cynonycteris.		
	C. marginatus.		C. andamanensis.			C. sherrin.		C. brachysoma.		C. amplexicaudatus.		C. minor.
	Calcutta.	Darjeeling.	Andaman.	Andaman.	Andaman.	Car-Nicobar.	Car-Nicobar.	Andaman.		Persian Gulf.	Bengal.	Java.
	♂	♂	♀	♂	♀	♀	♀	♀		♂	♂	♀
Length, head and body, .....	4.4	3.9	3.7	3.3	3.4	3.75	3.7	2.9		4.1	4.3	3.7
"    tail, .....	0.4	0.6	0.4	0.35	0.4	0.55	0.55	0.25		0.65	0.65	0.45
"    head, .....	1.5	1.5	1.4	1.5	1.4	1.25	1.3	1.25		1.7	1.7	1.55
Breadth, ear (anteriorly), .....	1.0	0.9	0.7	0.7	0.88	0.6	0.63	0.6		0.8	0.8	0.68
Length, from ear to tip of nostril, .....	0.8	0.6	0.4	0.4	0.4	0.3	0.32	0.4		0.4	0.55	0.35
"    from eye to tip of nostril, .....	...	1.2	1.15	1.0	1.15	1.0	1.05	1.0		1.4	1.4	1.3
"    for ear, .....	...	0.5	0.5	0.48	0.48	0.45	0.45	0.4		0.65	0.6	0.45
"    thumb, .....	3.0	2.9	2.6	2.6	2.8	2.7	2.7	2.2		3.2	3.15	2.8
"    second finger, .....	1.1	1.1	1.0	0.95	1.0	1.0	1.0	0.9		1.25	1.0	0.9
"    fourth finger, .....	5.0	4.9	4.7	4.2	4.7	4.7	4.75	4.0		5.4	5.2	4.4
"    tibia, .....	3.7	3.6	3.3	3.1	3.5	3.4	3.5	3.0		3.7	3.9	3.3
"    foot and claws, .....	1.1	1.1	1.0	0.95	1.05	1.0	1.0	0.8		1.35	1.4	1.05
	0.7	0.7	0.6	0.55	0.6	0.6	0.6	0.5		1.0	0.85	0.75

## Genus IV.—EONYCTERIS, (nov.)

*Nostrils not projecting; upper lip with a shallow vertical groove in front; index finger without a claw; thumb short, part of terminal phalanx included in the wing-membrane; metacarpal bone of second finger equal to the index finger in length; wings from the sides of the hairy back; wing-membrane from the base of the first toe; tail short, distinct.*

*Dentition*:—*in.*  $\frac{4}{4}$ ; *c.*  $\frac{1-1}{1-1}$ ; *pm.*  $\frac{2-2}{3-3}$ ; *m.*  $\frac{3-3}{3-3}$ .

*First upper premolar minute.*

## EONYCTERIS SPELÆA. Pl. XIV, Fig. 10.

*Macroglossus spelæus*, Dobson, Journ. A. S. B., 1871, p. 261, pl. x, fig. 3, 4.

When first describing this species, I placed it in the genus *Macroglossus* on account of its very close resemblance to *M. minimus*, the type of that genus, in the form, number and arrangement of the teeth. Subsequently, however, in the MS. of a 'Catalogue of Chiroptera in the Indian Museum' I placed it in a separate subgenus '*Eonycteris*' on account of the very different attachment of the wing-membrane to the foot and sides. Lately, Dr. Peters writes to me that he is convinced, after a very careful examination of specimens sent to him from the Indian Museum, that the differences existing between this species and *M. minimus* are of generic importance, and require the formation of a new genus for its reception.

Since I described this species in 1871 I have come to regard the dentition of the Chiroptera as of less importance in their classification than many other characters. I believe that, although the teeth of *Macroglossus minimus* and *Eonycteris spelæa* correspond very closely, these species yet present many structural differences of more than subgeneric importance, and I agree with Dr. Peters that the latter species should be placed in a separate genus. I have, accordingly, raised my subgenus '*Eonycteris*' to the rank of a distinct genus of Pteropidæ.

## Genus V.—MACROGLOSSUS, F. Cuvier.

*Nostrils not projecting, upper lip not grooved in front; index finger with a distinct claw; thumb moderate; metacarpal bone of second finger equal to, or longer than, index finger; wings from the sides, their points of attachment separated by a considerable interval from the spine; wing-membrane from the base of the fourth toe; tail very short.*

*Dentition*:—*in.*  $\frac{4}{4}$ ; *c.*  $\frac{1-1}{1-1}$ ; *pm.*  $\frac{2-2}{3-3}$ ; *m.*  $\frac{3-3}{3-3}$ .

*First upper premolar nearly equal in size to the second.*

MACROGLOSSUS MINIMUS. Pl. XIV, Fig. 11.

*Pteropus minimus*, Geoff. Ann. du Mus., xv, p. 97.

*Macroglossus minimus*, Temminck, Monogr. de Mammal., I, p. 191.

*Pteropus rostratus*, Horsfield, Zool. Researches in Java.

This species is so well-known, and has been redescribed so carefully by Temminck, that no further description of it is here necessary.

It is found in abundance in the deep warm valleys about Darjiling. It extends from India through Burma to the Malay Archipelago.

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DESCRIPTION OF A NEW SPECIES OF VESPERTILIO FROM THE NORTH-  
WESTERN HIMALAYA,—by G. E. DOBSON, B. A., M. B.

VESPERTILIO MURINOIDES, n. sp., Pl. XIV, Fig. 12.

This species is closely allied to *V. murinus* of Europe, from which, however, it is readily distinguished by the following characters:—

The general form of the ear is triangular, with narrow rounded tips: the inner margin is very faintly convex, almost straight, in its upper third, and the outer margin is concave beneath the tip, the remaining portion convex with a faint concavity opposite the base of the tragus.

In *V. murinus* the inner margin of the ear is strongly convex from the base to the tip, the concavity of the outer margin beneath the tip is very feeble, and there is a distinct emargination, almost angular, opposite the base of the tragus, succeeded by a well-developed terminal lobe; the general form of the ear is, moreover, oval, not triangular.

The tragus is slender and acutely pointed, with a quadrangular lobe at the base of its outer margin. In *V. murinus* the tragus is subacutely pointed, and the lobe at the base of the tragus is remarkably small.\*

The fur is dark brown above, with light brown tips; beneath, dark brown, almost black, with grayish tips.

The first upper premolar is very small, scarcely visible from without, and not much larger than the second. In *V. murinus* this tooth is distinctly visible from without and much larger than the second premolar.

The specimen (an adult female preserved in spirit) from which the above description is taken, was obtained at Chamba, at an elevation of about 3000 feet, by H. McLeod Hutchison, Esq., H. M.'s 14th Regiment.

\* The relative shape and size of the ears and tragi of *V. murinus* and *V. murinoides* are well shown in Pl. XIV, figs. 12, 13.

A dried specimen in the Indian Museum, labelled *V. murinus*, belongs also to this species. It is said in Blyth's Catalogue to have been sent from Masuri by Captain Hutton. The measurements of both specimens compared with those of *V. murinus*, L. from Europe are as follows —

|                        | <i>V. murinoides</i> |      | <i>V. murinus</i> |      |
|------------------------|----------------------|------|-------------------|------|
|                        | ♂                    | ♀    | ♂                 | ♀    |
| Length, head and body, | 2.7                  | 2.5  | 2.7               | 3.0  |
| " tail,                | 2.1                  | 2.1  | 1.9               | 2.3  |
| " head,                | 0.35                 | 0.9  | 1.05              | 1.1  |
| " ear, (anteriorly),   | 0.8                  | 0.85 | 1.0               | 1.0  |
| Breadth ditto,         |                      | 0.68 | 0.75              | 0.75 |
| Length, tragus,        |                      | 0.4  | 0.1               | 0.5  |
| Breadth, ditto,        |                      | 0.1  | 0.12              | 0.12 |
| Length, forearm,       | 2.2                  | 2.1  | 2.25              | 2.5  |
| " thumb,               |                      | 0.4  | 0.5               | 0.5  |
| " second finger,       | 3.75                 | 3.4  | 3.3               | 4.3  |
| " fourth ditto,        | 2.8                  | 2.8  | 2.85              | 3.3  |
| " tibia,               | 0.9                  | 0.9  | 0.85              | 1.05 |
| " calcaneum,           | 0.9                  | 0.9  | 0.7               | 0.9  |
| " foot and claws,      | 0.5                  | 0.5  | 0.5               | 0.6  |

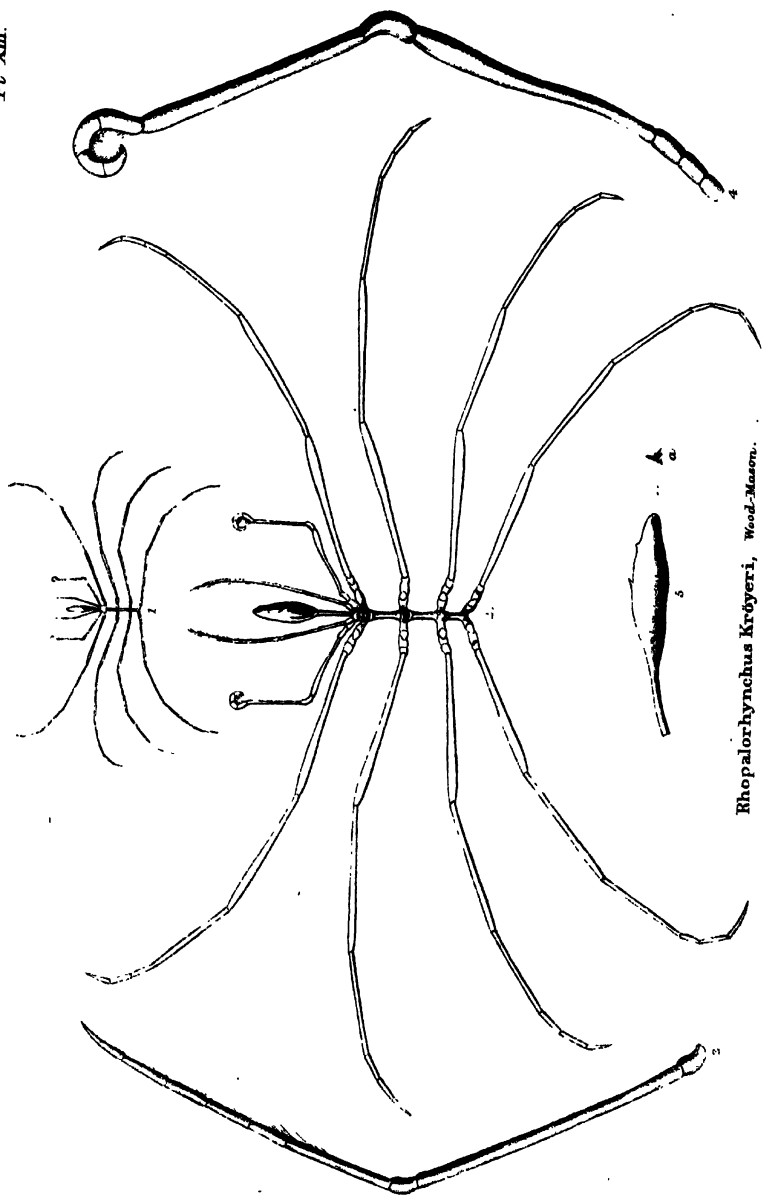
The measurements given in the third column are those of a not fully grown specimen of *V. murinus*.

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*Explanation of Plate XIV.*

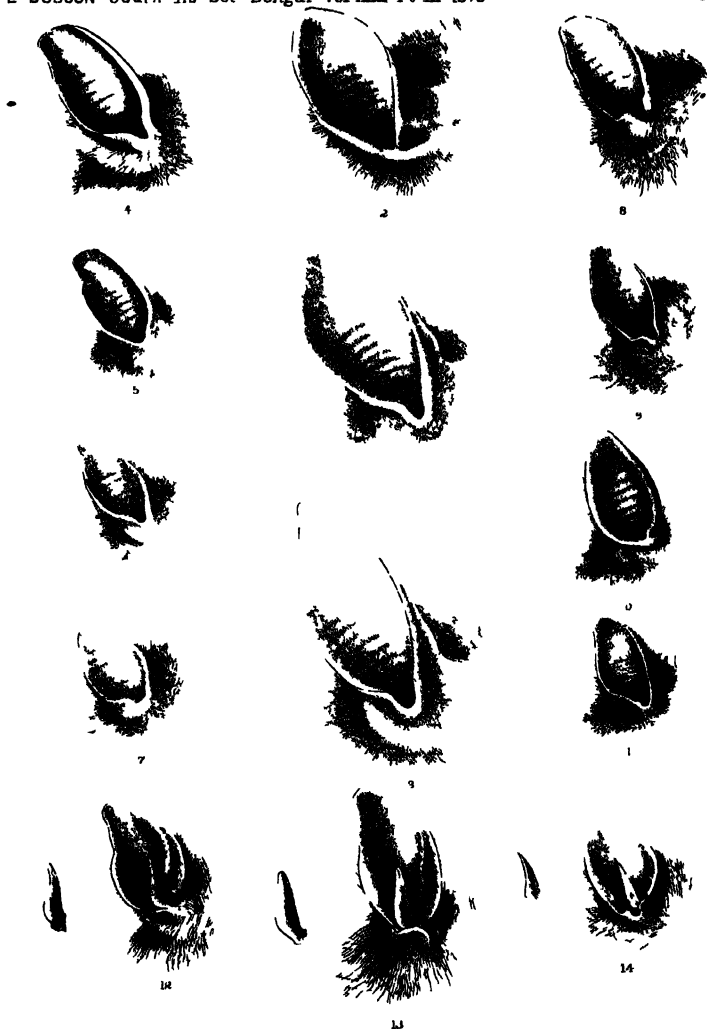
- 1 Ear of *Pteropus medius*
2. " " *nicobaricus*
3. " " *edulis*
4. " *Cynopterus marginatus*
5. " " " var *andamanensis*
- 6 " " *sherzeri*
7. " " *brachysoma*
8. " *Cynonycteris amplexicaudata*
9. " " *minor*
10. " *Eonycteris spelæa*
11. " *Macroglossus minimus*.
12. " *Vespertilio murinoides*
13. " " *murinus*.
14. " *Murina cyclotis*





*Rhopalorhynchus Kröyeri*, Wood-Mason.





- 1 *Pteropus medius* 2 *Pt. nicobariensis* 3 *Pt. edulis*  
 4 *Cynopterus marginatus* 5 *C. marginatus*, var. *andamanensis*  
 6 *C. sherrini* 7 *C. brachyotus* 8 *Cynonycteris amplexicaudata*  
 9 *C. minor* 10 *Eonycteris spelaea* 11 *Macroglossus variegatus*  
 12 *Vespertilio murinus* 13 *V. murinus* 14 *V. murinus*













